TREATISE

ON

VENEREAL DISEASES.

BY

A. VIDAL, (DE CASSIS,)

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WITH COLORED PLATES.

TRANSLATED, WITH ANNOTATIONS,

BY

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PREFACE OF THE EDITOR.

In preparing the Treatise on Venereal Diseases of M. Vidal for the press, the American editor has aimed to furnish the reader not only with a faithful translation, but also with the views of some of the leading British and American practitioners. Messrs. Vidal and Ricord are both attached to the *Hôpital du Midi*, the great venereal hospital of Paris, but in many respects the doctrines of our author are directly opposed to those of his distinguished rival. The annotations of the editor will be found to correspond, generally, with the views of the author, and he has been personally assured by many of the most prominent surgeons in Great Britain and this country of their cordial assent to the doctrines here inculcated. To Mr. Samuel A. Lane, of the Lock Hospital, London, and to Mr. Langston Parker the distinguished syphilographer of Birmingham, he would return his warmest acknowledgments, as well as to Dr. Byrne of the Westmoreland Lock Hospital, Dublin, and to Messrs. Cusack, Porter, Adams, Egan, Fleming and Wilmot of that city, for their very polite attentions and for the communication of many valuable facts by which the object of his visit was greatly promoted.

Although American syphilographers are few in number, yet we may with pride refer to the contributions of Dr. John Watson, of the New York Hospital, "*On some of the Remote Effects of Syphilis*," published in the first and fifth volumes of the *New York Journal of Medicine and Collateral Sciences*, and to the elaborate paper of Dr. H. D. Bulkley, "*On Syphilis in Infants*," in the *New York Journal of Medicine and Surgery* for

October, 1840. The value of these can be better appreciated in another part of this work. Through the politeness of Dr. Van Buren, the editor has recently had an opportunity of seeing (though too late to incorporate the details in his Notes) an instance of that exceedingly rare affection, *tertiary* syphilis in the infant. In this patient, there were nodes on the ulna and forehead, and enlargement of both testicles! The article on Strictures of the Urethra, omitted in the Treatise of M. Vidal has been supplied by a somewhat free translation of that in the author's well-known work on External Pathology. For the remarks under the head of Urinary Infiltration, and Urinary Abscesses, the editor is alone responsible. In illustration of these subjects he has also added a few woodcuts, borrowed from various sources, and although some may consider these topics as foreign to a special Treatise on Venereal Diseases, he is disposed to believe that the junior practitioner will not regret the liberality of his publishers which has enabled him to make these additions.

GEORGE C. BLACKMAN.

New York, Jan. 1st, 1854.

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PREFACE.

Innumerable are the works on venereal diseases, but the majority have been written for the purpose, more or less candidly admitted, of establishing or overthrowing some particular doctrine. Many volumes have been devoted to the vindication or subversion of the dogmas that emanated from idealism, and the school of Galen, as well as from his successors, the chemists and the vitalists. The same is true of the school of Broussais, which so recently denied the existence of a venereal virus, and of those who believed, on the other hand, in the entity of this virus. These productions have sometimes exhibited marks of genius, and have been distinguished by their elevated and splendid diction, but they were designed only for those acquainted with the subject. I write for a different class, and for those who have but little time to devote to the study of these affections. I propose to collect such facts and opinions as are of practical application, and which have survived the wreck of systems, the founders of some of which showed themselves profound observers. With this view, I have selected a plan sufficiently extensive to embrace the most important practical details, and yet which, without having too wide a scope, will, I trust, enable all to comprehend the substance of our knowledge on the speciality now termed syphilography.

From the time that venereal diseases were first somewhat carefully studied, it has been admitted, that, shortly after the application of the virus, certain lesions are generally produced on the parts contaminated; these are the *primitive venereal accidents.* Again, there are certain other morbid conditions, which are ordinarily observed subsequently to the above; these are the *consecutive venereal accidents.* Under this by no means modern division, these affections may be advantageously studied. I have adopted it, believing it to be the most rational and best adapted to the purposes of instruction, and not as serving as the basis of any particular system.

Hunter recognized two varieties of the consecutive or constitutional disease, and M. Ricord having availed himself of this subdivision, includes all the accidents under the heads of primary, secondary, and tertiary vene-

real disease. In this species of *triad*, of ancient date,* this writer fancied that he had discovered the basis of a true classification, on which he has engrafted not only a system, but a system the exact symmetry of which was well calculated to captivate an age inclined to absolute certainty, whilst its apparent simplicity has been greatly admired by certain minds, which it is unnecessary here to characterize. A distinguished writer has remarked, that system and hypothesis are synonymous terms; now we know the result of subjecting the latter to a somewhat rigid criticism. Still this system seemed to withstand not only the force of reason, but of arguments based on clinical observation. It rested its claims upon experiment, the influence of which may be imagined during the period to which we have alluded. Its opponents were therefore compelled to descend to the same ground, and it was attacked with the same instrument, as it were, that had been employed in its establishment. Various were the experiments performed, and the proceedings adopted. Some of these proved, that chancre was not the only accident that admitted of inoculation, but that those termed consecutive might also be thus transmitted. Now as the system was based essentially upon the exclusive inoculability of chancre, these results struck at its very foundations. They likewise seriously compromised the classification dependent on it, as the only admitted distinction between chancre and the other accidents was thus destroyed. Other experiments showed that chancre itself, or the most virulent syphilitic poison, from some natural or accidental cause, was perfectly harmless when applied to certain individuals; therefore, as the system boasted as its test for syphilis, the infallibility of chancrous inoculation, it found itself wanting in view of its practical application.

Thus, the *immutable laws of experiment*, proclaimed by M. Ricord, were annulled by experiment itself, and the promised certainty resulted in uncertainty.† It required but a slight knowledge of medical philosophy, and a little reflection upon the results of experiments, according as they are performed in the exclusively physical, or in the exclusively pathological order, to have anticipated what here occurred. Then came the cases proving that the secondary might appear after the tertiary accidents, and *vice versâ*. The order of the system being thus compromised, what remained? In the body of this work may be found the proofs of what has been here asserted. However, I shall be brief upon these points, for the main object of this work is to collect the practical truths which are the results of observation, and those which have survived the downfall of systems. Still

* Vid. "*La methode curatoire de la maladie vénérienne*" of Thiery de Herry, and p. 259 of this work, where I have exposed this *triad* in its author's own words.

† In the *Introduction*, under the heads of *Inoculation* and *Syphilization*, behold the glimmer thrown by the eloquence of M. Malgaigne, over the enormous breaches in the system of which this Professor was at one time a defender, and which had for its leader a friend of twenty years' standing!

I have thought it my duty to warn the young practitioner against disappointments and regrets, there being nothing, in my opinion, more dangerous, either in study or in practice, than to invest mere forms with certainty, and to pronounce that to be infallible which can be but probability or uncertainty. After the two principal divisions,—primitive and consecutive venereal diseases,—will follow the section on infantile syphilis. In this, we shall discuss the questions of the hereditary descent of the disease; its transmissibility from the child to the nurse, and from the nurse to the child. The importance of this chapter is evident, for, in the opinions there examined, the interests of the family, of justice, and of society in general, are involved, and yet the majority of French works on these topics are very incomplete? In the fourth part, we shall consider the prophylaxis of venereal diseases, including general and private prophylaxis, and regulations of medical police.

In the *Introduction*, after a few observations upon the synonyms, may be found an historical sketch of the venereal disease. I shall express an opinion on the nature of the syphilitic virus, and its principal effects. The causes of error in observation will be shown; experiment justly appreciated; the process of inoculation explained, whilst syphilization will be judged. This introductory chapter will conclude with some general observations on the transmissibility of secondary accidents.

Since I have stated, in the commencement, that I propose to make a *rèsumé* of the facts, opinions, and therapeutics, constituting syphilography, my great indebtedness to my predecessors will be obvious. All shall be quoted with acknowledgment. I will submit to the reader what experience has taught me at the *Lourcine*, in the female wards; and what I have learned at the *Hôpital du Midi*, during a service of more than ten years, since I became the successor of Cullerier,—the honest man, the sage practitioner.

Placed in a theatre so vast, I could not remain indifferent to questions by which science was agitated. I have ventured to discuss one of the most important, the transmissibility of the secondary disease. I think that, by experiment, I have decided it in favor of the contagionists. My experiments have been repeated in France and in Germany; all have produced a brilliant discussion in the Academy of Medicine. MM. Velpeau, Lagneau, Gibert, Gerdy, and Roux,* maintained, with their well-known abilities, the transmissibility of the secondary accidents, and what is without a parallel in the annals of the Academy, the opposite side of the question had but one defender! If from France we pass to foreign lands, we shall find that the opinions of learned academicians are generally

* It will be observed that among these orators are two distinguished syphilographers, and three professors of the Faculty of Paris. Read their discourses in the *Bulletin de l'Académie de Médecine*, where they are correctly reported. (Nos. for Oct. *et suiv.* 1852.

divided. We may see, particularly in the German press, how ably this doctrine has been sustained by Waller, Simon, and Droste.

To facilitate the study of the venereal accidents, the most important to be known, I have illustrated them by colored engravings, from designs which it is unnecessary for me to praise since they were executed by M. Bion. The necessity of these will be admitted when we come to the chapter on the cutaneous affections, for we know the importance of the syphilitic tint in forming our diagnosis, and the difficulties which the student encounters who wishes a *tableau* of the principal varieties. He will find it here, true to nature.

Lately, some syphilographers whose tenets have been shaken, have allowed themselves to descant bitterly, or in a jesting tone. They have even written in the same style. Having no motive for sharing in the sentiments which have inspired a literature of this kind, having, besides, remarked that it has neither thrown light upon, nor advanced the questions in dispute, I have abstained from it, and have endeavored to speak as clearly as possible, the language of science, since it is the latter only which I have in view, and the interests of those who would become her earnest votaries.

INTRODUCTION.

THE object of this is to assist the comprehension of matters which constitute the body of the work; it contains also a critical exposition of the method of investigation, and generalities on the great questions of syphilography. Thus, after a few remarks upon the synonyms, and a brief history of the venereal disease, I will describe the method, observation, and experiment applicable to this specialty. I will speak of syphilization, and conclude with an article on the transmissibility of secondary accidents.

SYNONYMS.

The diseases which I am about to investigate have received an infinity of names, sometimes originating from their mode of propagation, sometimes from a prominent symptom, sometimes from the country accused of giving birth to the malady, or from the people who communicated it to strangers; sometimes, indeed, from fable. Thus they were called *venereal*, from the fact that they were generally contracted during the venereal act; *verole* signifies pustules on the skin, which are observed in certain stages of the disease, and which have been considered analogous to those of variola; and they were called *Mal française, Mal napolitain*, because the French and the Neapolitans were supposed to have communicated them to other nations. Other people, too, have, in their turn, been accused, and have contributed in giving a name to these diseases; the Turks as well as the Germans, the Poles as well as the Moscovites, &c., &c. But it must be admitted that the French, in this respect, have gained the greatest notoriety. *Syphilis* is the creation of Fracastor; in his poem he imagines that the shepherd Syphilus, was the first who was smitten with the disease, which the gods, in their wrath, invented. I will not exhaust this subject, which might be made to fill many pages; without interest, however, either in a scientific or practical point of view. The names still employed are these: *Venereal Disease, Syphilis, Verole.* Some physicians use them indifferently. Nevertheless, the first is generally adopted, as it indicates the most common source of the disease, viz., coitus, or other libidinous connections. *Syphilis* denotes that a virus, a *morbid poison*, has intervened, and that it plays a principal part, whilst *verole* or *constitutional syphilis* signifies that this virus has produced a profound

change in the organism, constituting, indeed, a *diathesis*, a *disposition*, a *temperament*. This virus is sometimes inoculated by accident, by a wound, and the affections to which it gives rise may be entirely independent of any libidinous act. At present, there is a patient under my care, at the venereal hospital, who, in a strife, was bitten on the thumb by his comrade, and who was thus, at the same time, inoculated with a chancre.

HISTORY.

I shall be brief in my sketch of the history of syphilis, shrouded as it is in darkness, and from no point shedding light upon doctrine or practice. The point most obscure in its history is that of its origin. Is it as old as humanity? Is it modern, and did it originate towards the end of the fifteenth century? The vast learning of Astruc, the dates by him collected, and the commentaries which he has written in his efforts to solve these questions, have not in the least advanced our progress. We know, it is true, that Astruc is a believer in the modern origin of the disease, but we do not become acquainted with this fact until we have carefully perused his work unto the end. The majority of writers are opposed to Astruc, and maintain the doctrine of its ancient origin. To simplify the question, I should, in the first place, remark, that there are venereal affections which are not virulent or specific, as well as those that are. Now, no one can deny that the first have always existed; for in every age, inflammations, discharges, and ulcerations of the genital organs have been observed, caused by the too frequent indulgence in the venereal act, or by its performance during the menstrual period, or pregnancy, &c., &c. Thus, certain venereal affections had their origin in the earliest antiquity. The question remains to be settled, whether the *specific* disease, syphilis, in fine, is equally old, or whether it originated towards the end of the fifteenth century. In passing over the three principal phases in the history of these diseases, I shall endeavor to throw some light upon both of these questions.

Antiquity.—It is true that in antiquity the venereal disease had neither name, therapeutics, nor a special treatise. But Moses prescribed the observance of certain precautions to prevent the contagion of gonorrhœa (*profluvium seminis*,) the blennorrhagia of modern times. Hippocrates alludes not only to ulcers on the penis, but to pustules and the loss of the hair. Celsus is more remarkable still, for if rightly interpreted, we find that he was acquainted with almost every kind of ulceration on the penis, and with our present notions, it is possible to recognize in his descriptions, not only chancre but several of its varieties; as the common, and even the indurated chancre. Still further, Celsus points out the complication of phimosis, and of paraphimosis. But scientific distinctions could not have been established by Celsus, and it would be unjust to exact from him a diagnosis, to which many physicians, even in our own day, are incompetent.

In ancient times, everything was regarded as a result, and variety, of inflammation; a specific cause was unknown, and the connection of the different symptoms was not recognized. However, one fact, that of contagion, known to the most eminent, should have aroused the attention of the ancients; thus, Galen, with his genius, traced blennorrhagia to contagion, and his followers, in this as in other matters, adopted the opinions of their leader. As we depart from antiquity the elements of the disease become more distinct, and so connected as to constitute the venereal disease with its special forms. Thus the Arabs and the Arabists are very instructive in a historical point of view; Avicenna and Areteus describe a peculiar disease of the throat, which the latter calls the Egyptian disease, and supposed it to be confined to young people. The fact of its being contagious is distinctly noticed, and William of Salicet, Lanfranc, and B. Gordon had some idea of a specific cause: they note the deplorable consequences of carnal connection with unclean females, affected with discharges which even then they designated as virulent, (virulentes;) they refer to inguinal abscesses, genuine buboes having their starting point, the penis, and marked the cutaneous eruptions as constitutional affections, classing them with lepra. These abscesses were noticed not only as cold or hot, and distinct from their cause, but as having their starting point on the penis. Thus, we find this remarkable passage in William of Salicet; "And the bubo occurs when a man has a disease of the penis from connection with an unclean woman, or from every other cause, which gives rise to an accumulation of corruption in this organ, which corruption being unable to find an exit, returns to the groins, according to that law of affinity which these parts have with the infected organ." Lanfranc, who was a pupil of William, speaks of abscesses in the groin that follow ulcers on the penis: *Sæpe provenit aposthema in inguine propter ulcera virgæ, proptera quod est decensus humorum ad illa loca.** Further, Lanfranc advises a method of prevention, which I will mention when I discuss the subject of prophylaxis. I will add, that even before the fifteenth century there existed, as for example in London, regulations of medical police for certain houses of prostitution.

There can then be no doubt of the existence, in antiquity, of local non-virulent venereal diseases, and there is strong presumptive evidence also, that there were those of a specific nature, which produced both local and constitutional symptoms. Thus, it is very probable, that more than one syphiloid affection might have been found in that confused mass of cutaneous diseases, and among those lepers so often noticed among the ancients, and which have not yet disappeared, as is maintained by the hygienists. What led to the use of mercury after the epidemic of the fifteenth century? It was the success obtained in the earlier ages, when it was employed for the cure of those diseases which were confounded with lepra, and among which were the syphilides. Is this not another

* Pract. III., doctr. II., cap. II.

proof showing the connection existing between the affections observed before the fifteenth century and those which occurred subsequently to this period? Further, as I have already stated, the diseases called leprous, have not yet disappeared; but, having been more carefully studied, and better *specialized*, the part that lepra plays in the production of these affections, has been reduced to so narrow a compass that it would seem no longer to exist. That belonging to syphilis could not be shown without understanding the dependence existing between the primitive and the consecutive accidents, the cutaneous eruptions; now this dependence was unknown to the ancients; ignorant of the interval between the phenomenon of inoculation (primitive accident), and that of infection (consecutive accident), these two elements of the same malady have passed for two distinct diseases, proceeding from a different cause. Perhaps this kind of incubation of the consecutive affection, was in ancient times of longer duration, from circumstances which we cannot appreciate, and thus a new obstacle has been added to our progress.

Fifteenth Century.—During this epoch many persons were smitten with a scourge which has been represented as cruel and disgusting. The skin of the afflicted was covered with numerous pustules, agonizing pains racked their limbs and head, resembling those now called osteocopes rhumatoïdes; these were accompanied with sleeplessness, scalding of the urine, and fever. It was particularly during the latter part of this century (1495), and at Naples, whilst it was occupied by the French army commanded by Charles VIII., that this scourge was most violent, and counted its greatest numbers of victims. The rapidity with which the disease spread, the extent of country over which it travelled, gave to it the character of an epidemic; on which account, this period in the history of syphilis has always been known under the name of the epidemic of the fifteenth century.

But if, as was thought by some authors, this was a new malady, others again regarded it as a degeneration or aggravation of another disease. It was a kind of maranique pest, or indeed, an affection analagous to the epidemic lichen of Hippocrates, or a mentagra, having also an epidemic character. It is not surprising that, at this epoch, a certain conjunction of the stars should have been regarded as its cause; and still less that the atmosphere, the breath of speech, should have been considered the vehicle of the morbific principle. What first struck the observer, was the state of the skin covered with pustules, and the pains in the limbs with which the patient was tormented. The lesions of the genital organs were unknown, or appeared of but little consequence, compared with those which shortly followed. It is even probable that these lesions, which at this day are called primitive accidents, were sometimes completely absent. For my own part, I am inclined to think that such was the case, especially since I have proved in so positive a manner, the transmissibility of the pustular form of the syphilitic eruptions; indeed, at a certain pe-

riod, the pustules on the skin may be transmitted from a diseased to a sound person.

Whatever may be the explanation, the disease was considered not only as epidemic, but contagious, and different nations accused each other of having spread the plague. When the American origin of the disease was invented, these mutual accusations of European nations were somewhat checked. It was supposed that the Spaniards, on their return from the conquest of the new world, had brought with them a new malady, which they scattered in Italy, where, at that time, was stationed a French army. This opinion of the American importation, has found and still counts, many advocates. Numerous serious objections have been urged against it. M. Ricord, for example, who believes in the exclusive inoculability of the primitive affection, thinks it very astonishing that this should have retained its virulence during the long voyage of the Spanish sailors, and the long time which must have passed before their arrival in Italy. To this we may reply, that the consecutive affections may also be inoculated, and that the disease of the army in Italy having been specially characterized by the existence of pustules, these might have occurred among the Spaniards during the voyage. But there is a still more embarrassing objection against the doctrine of importation, based upon the immunity of the Spanish ports, when these voyagers first landed, and where they resided, and this too, after the long continence which had been forced upon them. Thus, it is well known that the greater part of the crews of Columbus remained at Seville, and yet this city did not suffer from the disease supposed to have been imported by these navigators. They could, therefore, have been dangerous only to the Neapolitans, and this too after having failed to contaminate the Spaniards! Besides, when the Spaniards arrived in Italy, this, like other European countries, was already infected. Swediaur goes so far, indeed, as to assert, that Europeans, the Spaniards—carried the disease to the new world. But I know not why the believers in the American importation of syphilis, would find no trace of it in antiquity; for, admitting their opinions to be true, we are compelled to ask, how did it originate in the new world. The question then of the first origin of syphilis, according to this view of it, is only shifted, not solved.

However this epidemic of the fifteenth century may have originated, to us it appears to have been accompanied with symptoms, in many respects different from those of the syphilis of antiquity, or of our own day. The illustrations given by those who observed the epidemic under consideration, show us, indeed, many traits in common with the modern disease, but certain tints and colors prove that the lesions really belonging to syphilis, were blended with certain other lesions and general symptoms, which render probable the existence of serious complications, arising from unfortunate hygienic conditions, or from very corrupt manners. Finally, it is quite probable that other diseases of a serious character prevailed at the same time with syphilis, and that they were mutually complicated with each other; thus lepra, typhus,

farcy, blended with syphilis, have been supposed to have given to the scourge of the fifteenth century the fearful character which it assumed. A strong argument in favor of this hypothesis, is, that the worst cases of syphilis observed at the present day, are found among the unfortunate beings who are compelled to suffer great privations, or who are laboring under a strumous or scorbutic diathesis. Under these circumstances, we sometimes find reproduced more than one feature in the horrible picture furnished by the fifteenth century: for example, I have at present under my care an excessively feeble young man, of a scrofulous habit, whose body is covered with pustules, whilst his lower extremities are affected with rupia, deeply excavated ecthyma, with cracked black crusts. Under these scabs, ulcerations have burrowed, some of which have taken the serpiginous form, and are the seat of atrocious pains. Has this case not more than one feature in common with the scourge of the fifteenth century, which has been denominated *morbus pustularum?* The pathognomonic signs of syphilis become more distinct and easy of recognition, in proportion as we isolate them from the diseases with which they were complicated, and from the epidemic influences by which they were modified. Then indeed, we may collect the elements of syphilis, and establish a form of disease entitled to a scientific nomenclature. In alluding to the earliest period in the history of the venereal disease, I have stated, that it could then boast neither of name, therapeutics, nor of books; but from the commencement of the sixteenth century, it has received many names, has had a special therapeutics, and has given rise to innumerable volumes.

Sixteenth Century.—A great genius now appears; his name forms an epoch; it is Fernel. Now a specific cause is discovered, the local and general symptoms are recognized. True, in 1552 James Bethemont had furnished Fernel with a hint of the fact; and Paracelsus, during the prevalence of the epidemic had seized upon the symptoms peculiar to syphilis, with the design of forming a new species in pathology. But Fernel will always maintain his place at the head of the truly scientific epoch of syphilis, and this too, with the greater justice as subsequent ages have made but few additions to his teachings. Not only did Fernel scientifically establish the necessity, and the existence of a specific cause, but he traced it from a diseased to a sound person; he demonstrated its transmissibility by different modes of contact, especially by the venereal act, whence the name of LUES VENERIS. The disease had its name, and its cause; symptoms were recognized and described; they were the primitive, and the consecutive or constitutional symptoms; in fine, the application of the poison, its local effects and general results, were traced with a masterly hand by Fernel. But, when he attempted to classify the effects of the virus according to the depth which it had invaded, when he had the presumption to establish four varieties of the malady, according as it progressively attacked the four layers of tissue between the skin and the bone; then, and then only, was he misled, as are all those who would imitate him, and number the varieties of the disease.

The fundamental part of his doctrine, however, still reigns in the schools to which it has descended, especially through the labors of Astruc.

SYPHILITIC VIRUS.

This, according to Hunter, is a morbid poison, resulting from disease, which poison, unlike other toxic agents, may reproduce a similar disease.

The syphilitic virus, in substance, cannot be detected; in its simple unmixed state, it eludes all our efforts at observation; here, micrography and chemistry have shown their impotence. This poison is manifested only by its effects, of which the most remarkable is its great facility of reproduction. Brought into certain relations with the living tissues, and in certain conditions, the virus develops a morbid action, the result of which is its reproduction, its multiplication. It is there a kind of germination, for the cause produces an effect which becomes of itself again the cause. Observation has demonstrated the existence of a syphilitic virus, for the number is infinite who have contracted chancres by connection with those affected with chancres. But to remove the doubts of certain minds, a resort must be made to experiment. In fact, pus from a chancre, inserted on the point of a lancet beneath the epidermis, has given rise to the same form of ulceration, possessing the same property of reproduction.

The syphilitic virus has ordinarily for its vehicle a thin, serosanious, mal-assimilated pus, in which organic detritus is more or less apparent. But pus the most laudable, muco-pus, may also be the means of conveying the virus, and it would seem to possess no influence in modifying its nature. The virus may exist not only in the morbid secretions, but it has not been proved that it may not change the normal secretions. It unites with the blood, and there undergoes certain modifications by which it becomes intimately blended with it. A particular kind of pus, that produced by gangrene, seems to neutralize the virus.

Virulent pus may, like vaccine matter, for a long time be preserved in tubes, or between two glass plates, without losing its properties; of this Percy has furnished the proof. But to develop these properties of pus, it must be applied in a liquid state, or be so placed that it will be rendered such by the moisture of the part in which it is inserted. Even when greatly diluted, a solution of this pus may be inoculated, and M. Puche has shown that one drop in a glass of water suffices to render this liquid virulent. This is worthy of note, as it sanctions what I denominate PHYSIOLOGICAL ABSORPTION of the virus, and will place us on our guard against the use of water which has been used for bathing or for washing by those affected with the venereal disease.

The gastric juice, or a solution of the sulphate of iron, does not change the properties of the virus (Hernandez). Certain acids destroy it. This however will be more fully noticed when we come to the subject of prophylaxis.

Is there more than one virus? The existence of a virus is no longer doubted, but the question constantly arises, Is there more than one virus possessing different strength and different qualities? This question has been proposed by every syphilographer who has sometimes met with such different effects from the virulent matter. Thus, they have asked, Is there not one virus which inflames, and another which gives rise to ulceration? Or, to speak more correctly, Is not blenorrhagia produced by one kind of virus, and chancre by another? To these, Hunter replied in the negative, and explained the different effects by the difference in the surfaces to which it is applied. If specific pus is brought into contact with secreting surfaces, blenorrhagia is the result (these surfaces are the lining membranes of the vagina and urethra); if the same pus is applied to the skin and the mucous membranes bordering upon it (as, for example, those of the glans, the prepuce, the vulva, and the lips), a chancre will follow. But as chancres have been observed in all the mucous membranes to which it has been applied, the theory of Hunter was necessarily abandoned. A double virus was then adopted as a substitute, and this doctrine was defended by Benjamin Bell and Hernandez. I shall notice this theory when I treat of blennorrhagia, but I feel bound here to show how it has been defended by Hernandez, in the face of arguments deemed most weighty, since they were derived from the results of experiments.

An experimenter by the name of André inoculated himself with gonorrheal matter, which produced a chancre. To this fact Hernandez replies that it is of but little importance as it is an isolated one, and because it has been reported by an unknown surgeon. But Hunter likewise produced chancres in the same manner. The objection now raised by Hernandez, is, that these ulcers healed spontaneously, and consequently they could not have been chancres! But he had a bubo which was followed by consecutive symptoms. The bubo, replies Hernandez, might have arisen "from the irritation of the ulcer of the glans." The consecutive accidents, such as ulcers in the throat and pustules, might have proceeded from other causes. We have just seen, that Hernandez would not believe André, because he was unknown; should we not suppose that the name of Hunter, so widely known, would therefore inspire him with the greatest confidence? Far from it, however, and he concludes by saying; "can we moreover place much dependence on the syphilitic nature of all the affections pronounced venereal by distinguished physicians?"

Still farther, Hernandez believes not even his own experiments. Thus, he inoculated convicts who preferred the operation to the labor of the arsenal. In seventeen, ulcers occurred which had no appearance of syphilis, and which were promptly cured without internal treatment. "In the others," says Hernandez, "it produced obstinate ulcers, some of which had every appearance of syphilis, with the general symptoms which would seem to establish it. Two were cured only after using mercury. Should we not suppose that our experimenter having inoculated twelve out of seventeen of these convicts with chancre, and that too with the

muco-purulent discharge of gonorrhea, would have believed in the possibility of producing chancres with this same pus? But no, these ulcers could not have been venereal, as they occurred in scorbutic and scrofulous subjects! Now Hernandez himself selected his own subjects for these experiments. Of course, he must have known previously that they were the victims of scurvy and the king's-evil! I have quoted the above remarkable passage from Hernandez to prove not only the identity of the pus of blennorrhagia and chancre, but also to show for once that experiments, no more than observation, can destroy systematic prejudices, or guard against subtilities, since we here see Hernandez, possessed with this idea of a double virus, resisting the most substantial proof drawn not from the experiments of two physicians only, but even from his own. For him, theory was stronger than proof.* It is generally supposed that it is peculiarly in our own day that imagination plays so active a part in *positivity* (*positivisme*), but this is a great mistake.

Hernandez having besides at his disposal the chancre larvé—since he invented the term—availed himself of it, but without abusing it. M. Ricord has again brought this forward, but he has abused it. According to his views, there is but one virus, that of chancre. Blennorrhagia is but a catarrhal inflammation, like any other arising from a simply irritating cause, but it has no connection with *syphilis*. When by accident, we succeed in inoculating a chancre from the urethral discharge, and when this discharge has been followed by constitutional symptoms, then the patient could not have had blennorrhagia proper; the discharge comes from a chancre hidden from our observation, deep in the urethra—a chancre *larvé*—since we must call it by its name.* Now, although some of these hidden chancres may be discovered, others cannot be found. I have stated that Hernandez invoked their aid, and we know that before Hernandez and M. Ricord, when evidence was to be destroyed, in the absence of other arguments recourse was had to occult causes. The human mind has never been more fertile than in this respect; generally it retards, when it would advance our progress. Thus we cannot be accused of sustaining our views by superannuated *Theses*.

Let us see, moreover, if the admission of a single primary accident, that of chancre, removes the difficulty. Granted, for the sake of argument, that the specific virus, which gives rise to consecutive symptoms—to *syphilis*—is secreted by chancre alone. But there will always remain a disease of the mucous membranes, without ulceration, occurring under the same circumstances as chancre,

* Under the head of Blennorrhagia, we shall attempt to show that our author's observation applies with equal force to M. Ricord, and we think that we shall be able to prove, even by the experiments of this distinguished surgeon, that blennorrhagia is occasionally inoculable, and that too, under circumstances in which he does not intimate his suspicion of the existence of a *concealed* chancre.—G. C. B.

† I am satisfied, as must be those who have carefully examined the two pathological specimens on which M. Ricord relies to establish his theory, that they were tubercular ulcerations of the urethra, similar to those observed in the prostate glands of the same patient.

and which in the same individual produces *metastatic* affections, such as opthalmic and arthritic inflammations; there will always remain a disease, caused by contagion, which is not a simple phlegmasia, and which gives rise to primitive effects, such as I shall in another place describe. If in this we do not see a specific disease, if we refuse to admit that the two lesions are produced by the same virus, we must find some other cause, some other virus, and with Benjamin Bell, we must adopt the doctrine of a double virus, one for gonorrhea, one for chancre. Still, even here, we originate nothing, we only revive the doctrine.

To explain the difference between blennorrhagia and chancre—their primitive and consecutive accidents—a virus of different strength has been admitted, a whole virus, and a demi-virus. MM. Lagneau and Baumés seem inclined to this hypothesis, to which I shall again advert. Instead of a double virus, Carmichael contends for four kinds, which produce four different accidents. I repeat, the lesions which sometimes follow a suspicious connection, are sometimes of such different forms, and so varied in their results, that we cannot be surprised that they should have been attributed to a different cause. But, thus far, we have arrived only at hypothesis, as we have studied under the influence of theory only. The experiments lately made to prove the inoculability of secondary accidents, or to show that the system may arrive at such a point of saturation as to resist all kinds of syphilitic action, or that chancre may be communicated to animals, have renewed the questions, whether the virus is of different strength, whether it is modified by the blood, or in passing through the various organs, or from one individual to another, or from one kind of animal to another kind, and indeed if the virus is not changed by the different conditions of the organism with which it is brought into contact. Finally, it has been asked, are the different products due to the seed or to the soil. It has been justly maintained that differences, and these too very great, may arise from certain peculiarities of the organism created by a particular hygeine, by affections which preceded the invasion of the syphilitic poison, by an immethodical treatment, administered without regard to time or quantity; thus long privations, excesses, scrofula, scurvy, a badly-managed mercurial treatment, may exert an influence on the progress and the form of a chancre. But, even among the numerous chancres produced by inoculation on the same individual, on the same organism, at short intervals, for the purpose of syphilising or saturating the individual, some have been observed to be very rapid in their march, others to remain a long time stationary, others, in fine, to become phagedenic, whilst others assumed the form of the real indurated, *classic* chancre; and what is worthy of note, these varieties have not always put on the character of the ulcers which furnished the matter for their inoculation. Thus just as the day would seem to dawn, darkness reappears, as has almost always been the case in syphilography, especially since it has made pretensions to positiveness. But, in this place, we can only glance at the questions. In studying the different forms of

syphilis, they will again come under our consideration. Then, whilst studying them in connection with cases, we may perhaps be permitted to have a glimpse at their solution. In investigating the nature of chancre, I shall particularly notice the connection of induration with constitutional infection, as this form of ulcer has been regarded as that which alone furnishes a contagious matter, or a specific virus.*

Modes of Propagation.—Each virus, has, so to speak, its peculiar method of propagation. In the great majority of cases it depends upon sexual connection, and the genital organs are those most commonly affected. But debauchery has devised other forms of connection, other methods of contagion, involving other parts, as for example, the arms, the mouth, the lips. Lactation may likewise favor contagion. The *touché*, operations with the fingers denuded of their cuticle, and wounds, have been the means of communicating the virus. The more intimate and prolonged the connection the greater the risk of contagion; it is from this cause that it is most frequently communicated by coïtus and lactation. The chances will be still greater if there be a solution of continuity, a wound or laceration; thus coïtus with organs of disproportionate size is attended with more hazard than is the act under opposite circumstances, for the first-mentioned condition may be the cause of lacerations, which singularly facilitate the introduction of the virus; this is the reason that, all things being equal, there is less risk in having connection with a woman who has born children, than with those who have not, particularly young females. So much for immediate contagion. The possibility mentioned, of

* An impression generally prevails that the question of the plurality of poisons has been definitely settled in favor of the doctrine of a single virus. It is admitted, however, by M. Ricord (Lett. xviii. p. 143), that it is far from being yet solved, and in his xixth Letter (p. 145), he acknowledges that his experiments have failed to establish the doctrine. Mr. Acton recognizes the connection between the indurated chancre and the scaly eruption. (*Treatise, 2d Amer. Ed.* p. 285.) Mr. Egan is disposed to adopt with but slight modifications the views of Mr. Carmichael, and with the latter regards the experiments made by M. Ricord as lending a support to the doctrine of a plurality of poisons (*op. cit.* pp. 49, 52; and Carmichael's *Clin. Lect.* p. 52). M. Ricord, indeed, states that in his experiments—"always performed on the patients themselves[1]—the ulceration produced by inoculation has invariably assumed the form and character of that with the inoculable matter." (*Lett.* xviii. p. 142.) Mr. Herbert Mayo, on the other hand, has reported a case in his work on Syphilis, p. 38, in which a clearly-marked underated chancre was produced upon the forearm of a patient, from the matter of a bubo following unindurated chancre. Again, whilst the experiments instituted in Dublin, furnish proof in favor of the doctrine of plurality of poisons (Egan, p. 54), those made at Turin (Sperino, on *Syphilization*, p. 300), tend decidedly to support the theory of a single virus!

We may attribute the varieties, the characters of mildness or severity of primary sores, to constitutional influences, but of the nature of these influences we are, and probably must long remain ignorant. Still, as observed by Mr. Porter, in his admirable lectures on syphilis, published in the *Dublin Medical Press* for 1846–7 (vid. Lect. viii.), "we are in this respect no worse off with syphilis than with many other affections; out of fifty patients, the subjects of operation, we know not the few that may be seized with erysipelas; out of a hundred wounded on the field of battle, we cannot point out the one or two that may subsequently die of tetanus; neither can we explain the occurrence when it has happened, otherwise than by saying it depended on the constitution."—G. C B.

[1] (Case viii. p. 198, in his Treatise, is reported as an Inoculation on a healthy person.—G. C. B.)

preserving the virus for a long time, would lead us to suspect that of its transmissibility by mediate contagion, by means of objects on which it has been deposited, as, for example, the tubes or edges of glass in which it has been preserved. The story is familiar, of the young girl, who, to disguise herself, put on the breeches of a man, and thus contracted syphilis. A mask, the clothes of a person infected, the seats of a privy, it is said, have each been the means of conveying the disease. The authenticity of these cases, however, is not beyond reproach, and even if it were, it would furnish an argument in favor of the communicability of the secondary disease. The sexual organs of the female may serve, so to speak, as a depôt, from which the virus may be extracted. A man having connection with this female may contract the disease, and yet the woman herself escape infection. This has long been known. Thus, we read in Astruc (tom. II., p. 16): "A woman having connection with a man diseased, if repeating the act shortly afterwards with a sound man, may infect the latter, and yet herself escape." Hernandez, with those who, in turn, have copied from him, makes use of this fact, and of this hypothesis, to support the doctrine that chancre alone can produce constitutional syphilis. For example, when a man contracts a chancre from a woman affected only with blennorrhagia, this woman must, according to them, have had a chancre *larvè ;* if this cannot be found they invoke the aid of this doctrine of recently-deposited virus in the organs of the female, a virus which the man carries off to his own great detriment, but to the decided advantage of the woman, who thus escapes infection. Ever thus do conjectures come in to the support of hypothesis.

Action of the Virus.—What is the *modus operandi* of the virus? To this question Fernel gave an answer, which, even at this day, is not without its value. He asserted that it acts like other poisonous agents, producing a venomous effect, similar to that resulting from the sting of an asp, the bite of a mad dog, or from the smallpox virus. Chemistry and vitalism have furnished their explanations, of which the exposition here would be of no real value. The solution which has met with most favor is that by Hunter; according to him, the virus produces upon the living tissues a peculiar irritation, and determines a particular kind of inflammation, the special product of which is virulent pus. (I use here the words of the French translation). In another place Hunter adds: "The presence of inflammation is not necessary to the continuance of this peculiar action, for the poison is still formed long after the signs of inflammation have disappeared." Besides the specific action, he adds, "it acts as an irritant, then it excites new inflammations, the products of which are not contagious." This first supposition, which has been reproduced in our day for the purpose of concealing the mistakes of experimenters, has singularly obscured the questions concerning the nature of buboes and blennorrhagia.

Hunter admits the absorption of virus without any lesion of the surface to which it is applied, that is, without ulceration, without

previous inflammation; this I call *physiological absorption.* After its absorption the virus passes into the blood, reaches every part of the organism, and may produce a double poisoning; one, which is acute, with local reaction in the point contaminated, characterized by what we call the *primitive accident;* the other, chronic, more profound, and maintained by the persistence of the first, and according to M. Cazenave, capable of being constantly aggravated by new infections until the state of cachexy is reached; this is characterized by the consecutive *accidents.* I have mentioned that some *would* restrict the terms *primitive accidents* to chancre; thus implying that only through its surface can the syphilitic virus be absorbed. But chancre is not indispensable to infection. Indeed, as I have already advanced and as Hunter himself taught, the virus applied to certain points of the mucous membranes may readily reach the circulation, without any solution of continuity in the tegumentary surface; the mucous membranes may easily be impregnated, and the absorption which it irresistibly exercises over most toxic agents which are presented to it in a liquid form, and over semi-fluid substances, is not confined to the syphilitic virus alone, since we see the virus of glanders, and that of variola, enter the blood from their simple application to sound surfaces. *Physiological absorption* does therefore occur.

Once absorbed, the syphilitic virus may rest dormant, and remain a cause without effect. This is the period of *incubation.* When it becomes developed, independent of the primitive symptoms, it is called primary or non-consecutive syphilis, (*verole d'emblée.*) In this case the general infection has preceded the appearance of the symptoms which have erroneously been called local. Thus, as M. Bousquet has proved, the vaccine pustle does not appear until the organism has been modified by the vaccine virus. MM. Lagneau, Baumés, de Castelnau, and Cazenave, are those, who, by their observations, have lately most contributed to establish the fact of the incubation and the reality of the non-consecutive syphilis, (*verole d'emblée*). When I treat of chancre I shall reproduce the facts which are peculiarly my own, and which harmonize with those of my *confreres.* Furthermore, *analogy* was already in favor of the *incubation*, for every virus possessing contagious properties lies dormant for awhile, and then reproduces itself; for a certain time the cause produces no effect, at least no perceptible effect. M. Ricord denies both the *incubation* and the non-consecutive syphilis, (*verole d'emblée*). According to him, it is fundamentally and radically a local effect, that is produced by the virus in the part to which it is applied. And here this author rests upon experiment. Immediately after the lancet has placed the virus in contact with the living tissue, this virus acts, and then commences at once the evolution of the primary symptom, which is attended with redness, like that of a flea-bite, a pimple scarcely raised above the level of the skin, which uninterruptedly passes into the pustule and chancre. But the operation by which the skin has been divided and more or less irritated, a proceeding which places the pus in direct contact with the divided tissues, is

not the physiological act that applies the virus to the surface, and subjects this surface to a kind of friction, thus promoting absorption, which remains physiological in proportion as the tissues are intact. Inoculation cannot justly be compared with coïtus, except when a laceration occurs during the latter act. Then, indeed, there is immediately a pathological condition; a local action is at once begun without incubation; or, in other words, the general does not precede the local action, but they are simultaneous.

OBSERVATION.

The surest foundation of all theory and practice, is derived from the observation of natural phenomena; but observation, always in pathology difficult, presents still greater difficulties when it relates to the accidents produced by the syphilitic virus. It must be acknowledged that it is rare to find patients whose statements can be believed, and certain facts escape the attention of the observer, either from his inability or want of capacity in observing them accurately. Let us first examine the causes of error dependent on the patient, after which we will notice those which may be attributed to the observer.

Patients attempt to deceive, or are themselves deceived. It is particularly the case in syphilis that we encounter deception on the part of the patient; the reason of which is obvious. But this source of error has been singularly exaggerated, and when it is found that by the statements of the patient certain theories are compromised, the patients veracity is too readily doubted. Generally, this disposition to deceive springs from interested motives, and not from any pleasure in the act. Now, the circumstances in which a patient can find it for his interest to conceal the truth, are not numerous; it is generally, when they would repel the charge of having transmitted the disease, or when the manner in which they have become infected is regarded disgraceful or wounds their pride; thus, the story of the nurse who accuses the nursling as the cause of her infection, that of the libertine, who denies having had connection or having been guilty of other libidinous acts, should be received with allowance. But patients of this class may still furnish us with useful information; indeed, if we question them with care, to their affirmations they will add an exposition of a series of phenomena which have had their influence, and in this manner sometimes conduct us to the truth. M. Castelnau, who has written a work on the OBSERVATION AND INTERPRETATION OF FACTS IN SYPHILOGRAPHY,* cites in support of this opinion, the following:

A grandmother took her grandson to wean; the child was in a wretched condition and had an eruption of pimples over the whole body, with excoriations in the mouth; after some weeks it died, and two months after its death, the grandmother as well as her

* Vid. *Annales des maladies de la peau et de la syphilis*, No. 1. I have profited by this work.

daughter (the aunt of the child) became affected with a squamous syphilitic eruption.*

Here, the only testimony we have in reference to the antecedents of the case, was that of the two patients themselves; however, it was hardly possible to doubt their accuracy, as, besides their own assertions, we find a series of morbid phenomena which often occur in a natural order; and the patients, as M. de Castelnau remarks, could not have known how to arrange them so as to give an appearance of truth, consequently we must admit the verisimilitude of their own statements.

Sometimes there exists another reason for believing the patient's own history of the case, as in the instance already quoted; it is, that it will be very difficult to understand the nature of the affection, if for their supposed falsehoods, we can substitute only explanations which are more or less improbable. In the case just noticed, the only other explanation left us, would be the existence of primitive symptoms in the aunt (the grandmother was about 70 years of age, and it is not very probable that she was thus affected); to establish the truth of this supposition, the aunt must have infected the child; and the latter must have communicated primitive symptoms to its grandmother, without her knowledge of the fact (which is still more difficult to believe, as these symptoms must have shown themselves as evidence in certain parts, such as in the mouth, or in some other part of the face or hands); that this child had been so promptly affected by the virus as to die in two months, and this too while the grandmother and aunt were in excellent health; that, in fine, these two women, of such opposite ages, had been attacked at the same time with constitutional symptoms, although according to this hypothesis, the period of primitive infection must have been very different in the two cases. We see how similar explanations would be improbable, and how it would be more natural to believe the statements of the patients, especially when we know that they correspond with what many physicians have observed in cases where they have been able to follow, step by step, the development of all the phenomena. (Loc. cit.)

At the same time, in approving the distrust with which those facts should be received, the authenticity of which rests solely on the patients honesty, I am far from justifying the conduct of those who reject them altogether, no matter what their source, provided they tend to conflict with their preconceived theories. Do we not, in the most serious affairs of life find that certainty is established by testimony which has no other warrant than the honesty of the witness; why should we not in the same manner arrive at a scientific certainty? Are there not men whose morality is above suspicion, and whose testimony is equivalent to the most scientific demonstration? When Hourmann, observes M. de Castelnau, declared that he could not have contracted syphilis, except in the discharge of his duties as a physician, no one thought of doubting his veracity, and had any one dared so to do,

* This case was communicated to the author by M. Alph. Robert, surgeon to the hospital *Beaujon*.

he would have provoked but a just and universal feeling of indignation, among all who were acquainted with that virtuous man. I was the colleague of Hourmann at the Lourcine, and I can but repeat the language of his pupil. Besides, we shall remark, that the syphilographers who are least disposed to admit moral proof, and who subject every female to suspicion, do not hesitate to invoke the chastity of a husband when it is necessary to support their theory.

We will now consider the statements given by those patients who, without having any interest in so doing, yet deceive themselves. Here, as in the study of other diseases, some of which present still greater obstacles to their investigation than syphilis, we are obliged to have recourse to the recollection of the patient for the causes, the first phenomena which appeared, and for the termination. It is evident, from the concordant results of different observers, that these may often lead us to the truth. Here, indirect means, artificial methods of arousing the patient's memory, every precaution, in fine, which is recommended in the best treatises on general pathology, must be made subservient to our purpose. Besides, there is a class of patients so intelligent, so careful of their persons, who are, indeed, such good observers, that their statements merit the greatest confidence, at least in the establishment of certain facts. Thus we shall see in examining the subject of incubation, that we do meet with patients capable of furnishing us with the most precise information on this point. Moreover, what is here required to be established? Two capital circumstances: 1st. The precise date of the coitus; 2d. The time of the appearance of the first symptoms. A number of patients may very satisfactorily establish these circumstances. It is true that others require to be noted; it is well also to take into account the habitual frequency of the coitus, for what is due to one of these acts may be attributed to another; we must know if there was any preceding infection, and if any excesses have thrown the system into such a commotion as to disturb the natural order of the phenomena. But all this is not only possible, but sometimes unattended with difficulty, and we shall discover, in treating of incubation, that certain patients have been able, by their own statements, to furnish the elements essential to the solution of this important question. Still further, on this point, it is curious to observe these same *systematists* who deny a patient the necessary intelligence to establish a compromising fact, afterwards find this same patient quite competent to furnish details most difficult to be known, but which are favorable to their views. We shall have occasion to admire this inconsistency when we come to the chapter on the *Syphilida*. Some of these are not easily diagnosed; we know that the syphilitic eruption appears after chancre and before exostosis, that it is, in fine, a secondary symptom. Now, if in interrogating a patient, who has had these three symptoms, there is the least shadow of an eruption at the epoch required by their theory, his story is at once accepted, for the patient merits all confidence; he is then intelligent, and his memory has not deceived

him. But if, on the other hand, he places the most strongly-marked eruption after the exostosis, for example, then no matter what the precision or the number of his facts, the patient is no longer intelligent, his memory fails him, he is incompetent to describe the eruption on his skin, he is mistaken in its form, color, &c., &c. We see, then, that confidence is given or refused to a patient, not according to the degree of his intelligence, but according as his story is favorable or unfavorable to a particular theory. Would it not be better then to disregard *in toto* the testimony of the patient?

Away with all exaggeration, and let us try to distinguish the patient who can, from the one that cannot instruct us. We should not always judge of a patient's intelligence by the reply given to our first question, nor to our direct questions, but only after we have become better acquainted with them, and have subjected them to a cross-examination. In this manner certain patients may furnish us with valuable assistance in eliciting the truth. This, however, may be much more surely attained when we can see the patient at the outset of the disease, and can follow it through all its evolutions and note all the phenomena which it may present. Unfortunately, every observer does not feel the necessity of collecting the minutest details; indeed, some are content with the most prominent facts, which, in their estimation, are quite sufficient to establish the character of the disease. The young practitioner should let nothing escape his attention, not even the most trifling circumstances, for the absence of one of them, though it may not be essential, may prove a prize to those whose theory may be impaired by the facts of the case, and may afterwards unexpectedly compromise its authenticity forever.

The ignorance and unskillfulness of the observer may be admitted; but sometimes he is unjustly accused: thus, in the questions to which blennorrhagia gives rise, it is all important that the facts in favor of, or against its specific character, should be collected with the greatest care; no means of aiding our diagnosis should be neglected. In the case of a female, for example, not only the external parts of generation should be explored, not only should we press with the finger the urethra from behind forwards, expose the vagina with the speculum, explore it both when the instrument is introduced and when it is withdrawn, but we should bring into view the neck of the uterus, cleanse its mouth with a brush, and all this to see if we can discover no chancre to explain the specific nature of the symptoms which may occur, or to prove that they may arise, in the absence of chancre, from the inflammation of a mucous membrane. It cannot be denied that formerly this physical examination was too much neglected, and even in our own day it is not always thoroughly made. But since Hunter duly warned us of the sources of error in his remarks on blennorrhagia in the female, since the speculum has been so frequently employed, and especially since it was known that chancre might be hidden from our sight, our investigations have been more accu-

rate, and there is daily less cause for the reproaches which have been made against observers.

To complete the subject, I will borrow the conclusions of M. de Castelnau, as contained in the first part of the work already quoted:

1. Patients, with but few exceptions, do not attempt to deceive, except when they are impelled by interest, shame or fear. 2. Such cases are exceedingly rare in porportion to the number of persons affected with venereal disease. 3. Patients placed in such circumstances may still furnish us with reliable information, either because their testimony is corroborated by the fact of its conforming to the natural order of a series of pathological phenomena, or because we have no right to suspect their honesty. 4. There are patients who, by their intelligence and regard for their persons, may impart precise and sufficient details, respecting the diseases with which they are, or have been affected. 5. The physician may sometimes have the opportunity of witnessing all the morbid actions which constitute the disease in question, and then collect his facts without any doubt of their exactness, provided he has devoted to their study sufficient time and care.*

Observation is therefore difficult, and when not beyond reproach, may be productive of error; but there is still greater difficulty, in that operation of the mind by which we form our induction from the facts observed. There are facts, the connections of which are so simple, so evident, that their expression alone forms the axiom. But there are others which are not self-evident; these must be subjected to our reason, before they can attain a scientific value. This process is attended with serious difficulties; if the mind have not a proper bent, if it be biassed or imbued with some particular theory, error is sure to be the result. In this operation, we must, first of all, never lose sight of the facts themselves, and must guard against substituting suppositions in their place. Thus, in the question of the dependence of syphilitic blennorrhagia upon chancre, we should seek on all sides for the ulcer, and when found, note it particularly in interpreting our facts, but we should guard against supposing its existence, because a certain system positively requires that it shall figure in every case of the kind.† We must

* *Annales des maladies de la peau et de la syphilis.* *No.* 1, p. 10.

† The following remarkable instance of substituting supposition for facts is worthy of record. Dr. Richet, the family physician of a Parisian merchant, met M. Ricord in consultation. The case was that of a child, affected with syphilitic ulcerations in the ano-genital regions. Both parents and nurse being apparently perfectly sound, much perplexity was felt in deciding upon the origin of these ulcerations. The fact was mentioned, that ten clerks lodged in the same house, and perhaps one of these might be affected! Seizing upon this happy suggestion M. Ricord at once attributes the infection to the dandling of the child upon the naked hands of one of these clerks. M. Velpeau, in his communication to the Academy of Medicine, Sept. 21st, 1852, states that by accident he had learned from Dr. Richet, that this story of the poxed clerk was a mere invention, having no other foundation than the circumstances above mentioned. In a letter subsequently addressed to M. Velpeau, Dr. Richet observes: "No, positively, no, neither M. Ricord nor myself saw any such clerk!" M. Ricord's apology, as furnished in his *communication* to the Academy, Oct. 12th, 1852, is, that his report of the case was given from memory, which report in his *Letters* (xiii., p. 104), is followed by

not reject certain facts, or deny the importance which they really possess, because they do not accord with those which have generally been observed. Admit that they are exceptional, but if well established, nothing can destroy them, for a thousand negative facts cannot destroy one positive fact: this is an axiom that has been admitted since men have known the art of reasoning. Is more than one fact required to prove that wounds of the heart admit of recovery?

It is not inappropriate to notice in this place a part of the discourse of M. Gilbert, in support of the doctrine of the transmissibility of the secondary accidents. The orator, wishing to show what errors may result from interpreting facts whilst swayed by the narrowing influence of theory, exclaims: "Thus, to limit primary syphilis to chancres, an urethral chancre in certain cases of blennorrhagia must be *supposed*, and *chancres* with *flat primary tubercles*, or mucous pustules, the occurrence of primary buboes (d'emblée), be denied as well as the contagious character of certain *vegetations*, and we must metamorphose into chancres certain *consecutive ulcerations* of the tonsils, mouth or skin; thus, must we torture and interpret the instances of the tardy appearance of the secondary accidents of syphilis, and the cases in which some of these accidents have been transmitted, a transmission which has occurred more than once from the habitual and intimate relations which exist between the husband and the wife, the nurse and her nursling, and between the latter and other children under the same roof. The testimony of most credible witnesses must be rejected, and those who do not wish to explain clinical facts in the most difficult and irrational manner, must be accused of error or credulity. In a word, we must cull, prune, strike off, polish, and reduce to a certain measure marked in advance, all the elements of science that they may fit the famous *square*,* without distorting its regular lines, or changing its solidity.

The difficulties in the way of observation, the qualities of mind, the time and patience required to render it complete, the soundness of judgment and intelligence necessary to a correct interpretation of facts, the doubts which cannot be removed, even by the union of all these qualities on the part of the observer, have some-

some observations upon the *tact* and *skill* required to discover the true origin of the disease in these perplexing cases! For all the details connected with this case the reader may consult the collection of Reports and Discussions, entitled "*De la Syphilization*," &c., &c., pp. 304, 357, 378. To complete the history of this case we should add, that M. Ricord very modestly requests M. Velpeau, if he is not satisfied with his *supposed* cause (*the poxed clerk*), to furnish a more rational explanation. We read in the "*Novum Organon*," Aph. xix., lib. 1st, that "*duæ viæ sunt ad inquirendam et inveniendam veritatem.*" Whether the method adopted in the above instance be the "*via vera*," we leave for the reader to decide! We would also humbly submit whether M. Ricord himself has not furnished us with a more rational supposition of the true cause of the infection of this child, in his history of the case, (*Letters* xiii. p. 105,) where a child was born affected with syphilis, the *legal* parents of which, and the *cavalry* officer, the *real* father, were, to all appearance, perfectly sound, though the latter *had* been diseased?—G. C. B.

* The orator here alludes to a *confrere* who has compared the system of M. Ricord to *square*.

† *Gazette des Hôpitaux, Seance* of 22d Sept. 1852.

times led syphilographers to prefer experiment, and to give to facts thus obtained, a preference over those acquired by clinical observation. This leads us to the subject of experiment.

EXPERIMENT.

By this, we are not limited in our observations to facts naturally produced, but we provoke the manifestations of the disease, by trifling operations, by experiments. Hunter chiefly contributed to introduce experiment into syphilography, for the purpose of facilitating our investigations. Attempts have since been made to base upon it a doctrine, a treatment, a system. Now, we have already remarked, that a system is but an hypothesis. By experiment, a completely imaginary syphilis has been created. This was a natural consequence, for they knew not how to discriminate between experiment purely physical, and that based on facts, partly physiological, partly pathological. If living nature had the uniformity of that which is dead, the deductions from the experiments made upon it, would possess the same characters of certainty and simplicity, as do those which are entirely physical, and by them, laws might be deduced to establish a natural scientific system. But, as in the problems which we have to solve by experiment, the vital forces are concerned, as well as idiosyncrasies and morbid phenomena often very complex, the results must differ from those obtained in trying to solve the problems of physics or of chemistry. Besides, these results have not the character of simplicity which can prevent systematic interpretations, and the cavils of men of preconceived opinions. Indeed, opinions most opposite are daily expressed on the results of an inoculation. What I have related of Hernandez, has probably not been forgotten. Again, the proceedings adopted for the purpose of provoking syphilitic manifestations, are on a very limited scale. We shall soon discover, that those of nature are very diversified, and who can tell how numerous are the modes of propagating the disease? Our proceedings, again, are very unlike those which we would imitate; for example, there is a great difference between the insertion of the virus beneath the skin with the point of the lancet, and the contagion from coïtus. The results must vary accordingly. We find, indeed, that the pus from a chancre which is inserted in our tissues by the operation, always produces a chancre, while that from a chancre the result of a coïtus, sometimes produces a mucous pustule, sometimes a vegetation, sometimes a chancre. Certain accidents which are transmitted by coïtus or other intimate connections, are not communicable by inoculation or any artificial proceedings.

I am far, however, from rejecting experiment as a means of investigation; I know too well the services which it may render; but for myself it has no real value except when its results correspond with the facts observed in natural pathology. Again, experiment being at present greatly in vogue, and many physicians having neither time nor disposition to test the questions in syphil-

ography by the *clinique,* and by the rules of philosophy, prefer the demonstrations by the *lancet.* Unfortunately some of the most distinguished syphilographers, trusting to their reason and their clinical observations, condemn experiments as being immoral. They reason much, and reason very justly, but perform no experiments, hence their limited success contrasted with that of those who require actual demonstration. Other syphilographers, however, relying chiefly on observation, despise not experiments, and believe, that when used within certain limits, they may prove useful to science, without infringing upon the laws of morality, properly understood. They experiment then more philosophically, that is to say, without losing sight of clinical observation, they are no longer content to address the mind exclusively, but they speak to the senses, and it is chiefly by experimental means, indeed, that they successfully attack the errors of experiment. Next come those who carry their experiments to extremes. Experiment is now no longer confined to the hands of M. Ricord and his pupils; it is made in a different spirit, and by methods more varied, whence the results which I shall soon mention.

I speak not of the dangers of experiment, and my aversion to everything not directly scientific must have been observed. The dangers which it is my duty here to notice, as I write for instruction, are of another kind. I have stated, in another place, that nothing is more injurious to study, to true progress, than to invest forms with certainty, and particularly to designate those methods of exploration which may sometimes conduct us to it by the name of certainty, as these means are far from being infallible, especially if they are trusted to alone, and are not based upon observation. Delusions are thus prepared for the student, and disappointments for the practitioner. I think, therefore, that in speaking of the *immutable laws of experiment,* M. Ricord is guilty of error, and exposes his pupils, who take him at his word, to disappointments innumerable. Those laws only are immutable which are not made: they are from all eternity; by them was chaos dissipated; his laws, those which he has created, if possible, would cause it to reappear. Again, by experiment we produce pathological facts, the interpretation of which is as difficult as that of natural facts; the proof lies in the want of unanimity, and the doubts which have arisen from the experiments lately performed to test the doctrine of syphilization, and which we shall soon proceed to notice.

INOCULATION.

The experiments instituted for the purpose of producing the various forms of syphilis, have chiefly consisted in inserting the virus or the supposed virulent humor, according to the method adopted in vaccination. The lancet has been charged with the matter which we would apply to the living tissues, and by it the skin is punctured. Sometimes incisions have been practiced, some scrape the skin so as to remove the epidermis; some make

scarifications; and in some instances an infected part has been fixed against a sound part; thus, Luna-Calderon scraped the skin before he applied the virulent pus in his experiments for the prevention of syphilis; M. Auzias removed only the epidermis of animals with the curved scissors; Wallace often denuded the skin with a blister, and dressed the wound with charpie saturated with the pus of a pustule. This proceeding has been repeated by M. Bouley, who has thus inoculated with the matter from a pustule, and produced a second syphilitic infection in a woman whose system had already been completely contaminated with the disease. I have performed the same experiment with success. Waller scarified healthy individuals, and dressed the little wounds with the blood from a syphilitic patient, or, with the pus from mucous pustules, and in both cases he succeeded in producing constitutional syphilis. M. Velpeau fixed the prepuce upon a portion of a glans affected with vegetations, and in this way produced a vegetation on the part. The methods may be ever so diversified, yet can they never reach the same variety as the natural proceedings, and particularly is it true, that the latter can never be completely imitated. This is the reason why experiments often fail.

Again, two conditions are indispensable to the success of an inoculation: 1. A virulent matter; 2. An organism, with a certain susceptibility to the action of the virus. There must be good seed, and a soil favorable to its germination. Now these two conditions may be wanting, and nothing can previously indicate their absence; therefore, inoculation cannot be infallible, as some have pretended; it can be but a means of investigation, and never a practical measure, and a system which rests solely upon it, should fall. M. Ricord has pretended by inoculation to distinguish affections apparently similar; to establish the difference between the primitive and consecutive accidents, to aid the cause of justice, and, in fine, to establish a classification, a system; further, still he maintains that by the same proceeding, he has proved that syphilis is confined to the human system. Now, to effect all this, it is necessary both in a practical and scientific point of view, to establish the infallibility of inoculation, to give to it the character of a test. M. Ricord believes in this infallibility, and has had the boldness to proclaim the equality of the human species before a chancre, before that ulceration which, in his opinion, is the only inoculable form of syphilis. Now it has been proved, that there are chancres, real chancres, which do not contain inoculable matter, whilst there are true consecutive accidents which may be inoculated; it has been demonstrated that the most virulent pus produces no effect on certain individuals, that there are, in fine, some persons who from accident or idiosyncracy are insusceptible of any syphilitic infections. To give, therefore, to inoculation the value of a chemical test is a most unfortunate idea, for in a theoretical point of view, it leads to deception, and as regards practice to cruel disappointments; whilst in legal medicine, which is of serious importance, it may divert justice. True re-agents have a negative and a positive value; an infusion of turmeric when changed to a

red color, shows the presence of an acid; and thus furnishes the certainty of its existence; but if it be not changed to red, then the absence of the acid is positively indicated. Do these observations apply to inoculation? No. If, therefore, inoculation produces a positive result, we must say to justice—yes, the accused is affected with syphilis, he is guilty; but if inoculation produces no effect, we cannot say—the person is not infected, he is innocent; we cannot say it, for it has been proved, that this person might have one of the most infectious of all chancres, which nevertheless, under certain circumstances, would not be inoculable. I must remark, however, that I have made a concession in accepting the positive results of inoculation as weighty evidence in the cause of justice. I must add, that these positive results may be differently interpreted, since they are pathological facts, which are not simple, and which may possess different characters, for we know that there is no characteristic pustule, the first effect of the inoculation of chancre. In fact, there never was a characteristic pustule, and it will be shown, in treating of the first period of chancre, that this ulceration may be established *at once* (*d'emblée*), and that if it is preceded by another lesion, this lesion is sometimes a pustule, sometimes a vesicle, sometimes a bulla. Still further, when chancres were produced on the ape, M. Ricord declared that he could not there recognize a form of syphilis, unless such chancres were followed by *consecutive* accidents! We see then what becomes of inoculation, even in the opinion of M. Ricord, since, according to his own views, the existence of chancre is not proved until consecutive symptoms shall have supervened.*

* Were a practitioner required for medico-legal purposes to give a *positive test* of syphilis, could he comply with such a requisition? In corroboration of our author's remarks in reference to the insufficiency of inoculation, we may quote the numerous experiments made by Dr. Egan, at the Westmoreland Lock Hospital, Dublin. In his recently-published and excellent work "*On Syphilitic Diseases*," p. 27, he remarks that he was not unfrequently foiled in obtaining the characteristic pustule,[1] "although, from the appearance of the primary sore, and the subsequent effects upon the constitution, conclusive evidence was afforded of the contaminating influence of the disease." He states that every possible care and attention were bestowed upon these experiments, and the matter was always taken before the reparative process had commenced. No one acquainted with Mr. Egan, can, for a moment, doubt his competency or credibility. Mr. Langston Parker, in his "*Modern Treatment of Syphilitic Diseases*," (*2d Ed.* 1845, p. 26,) very happily expresses the true value of inoculation as a test, as follows: "In the present state of the science, all we can say is, that certain ulcers, the result of sexual intercourse, and not distinguishable by their external characters from other ulcers equally the result of sexual intercourse, yield a characteristic pustule by inoculation; but the ulcers which do not yield the characteristic pustule, are equally liable to be followed by secondary symptoms, and are equally benefited, under many circumstances, by mercury." In alluding to Mr. Egan's experiments we should have observed that those made with the matter of buboes led to the same result, viz., a frequent failure in producing the characteristic pustule. (Vide *op. cit.* p. 22.)

The *physical characters* of the primary ulcer are so diversified that no absolute diagnosis can be formed from them alone. Although M. Ricord (*Lett.* xxi. p. 162) states that the physiognomy of the primary sore is generally so expressive that we may recognize it at a glance, yet in *Letter* viii. p. 140, as well as in his *Treatise*, (*4th American Ed.* p. 48), he is very decided as to the impossibility of forming a correct opinion from the physical characters alone. For the most complete account,

[1] In discussing the question as to the existence of a *blennorrhagic* virus, we shall prove, even by M. Ricord himself, that there is no *characteristic* pustule.—G. C. B.

INOCULATION OF ANIMALS.

Hunter, Turnbull, MM. Ricord, Cullerier, de Castelnau, and other experimenters have tried in vain, they assert, to inoculate animals with syphilis; hence they have concluded that the inoculable principle of syphilis is peculiar to man and cannot be transmitted to the brute. M. Ricord has reduced this proposition to a formula, and more than all others, has labored to defend it, relying upon Hunter's experiments and his own, which, he asserts, have been very numerous. Now, as regards Hunter's experiments, we quote his own words: "In whatever manner it arose, it certainly began in the human race, as we know of no other animal that is capable of being infected with this poison." In another place, Hunter adds: "We know of no other animal that is susceptible of the venereal irritation, for repeated trials have shown that it is impossible to give it to a dog, a bitch, or an ass." He then subjoins the following note: "I have repeatedly soaked lint in matter from a gonorrhœa, chancre and bubo, and introduced it into the vagina of bitches and of asses and under the prepuce of dogs, without producing any effect. I have also made incisions and introduced it under the skin, and it has produced only a common sore. I have made the same experiments upon asses, with the same result."*

It is evident that these experiments are neither numerous nor varied, and that the operation here referred to by Hunter, is not of a very decided character.

M. Ricord asserts that he has performed numerous experiments. I think that we shall search in vain for a detailed account of these experiments. In his writings, I have been able to find but the following passage: "I have tried, with syphilitic pus, procured in every possible condition, to inoculate dogs, cats, rabbits, guinea pigs, and pigeons, which are said to be soon destroyed by the absorption of the syphilitic poison. In no instance, notwithstanding the variety of the experiments, has it been possible to transmit the disease." We might, without seeming too sceptical, demand some details as regards the proceedings followed, in order to compare them with those which at the present time have produced positive results, for animals have been inoculated with success. We might, without appearing too exacting, inquire if, in this enunciation there is that on which a law, or even a proposition, under a

however, of the varieties presented by the external characters of a primary sore, we would refer the reader to the admirable lectures of Mr. S. Lane, in the London Lancet, for 1842, vol. xi. p. 497. Mr. Porter proposed, as the one undeniable test of syphilis, the capability of the individual supposed to be affected, of transmitting the disease to the fœtus *in utero*, (*Lect. on Syphilis, Dub. Med. Press, Feb. 24th*, 1847, p. 114;) but in a note on the same page he adds: "As if to destroy the possibility of ever establishing a test of syphilis, I have, this day, (Aug. 25th, 1846,) been informed, by an authority on which I place implicit reliance, of the case of a woman having twins; one of the infants was deeply infected, and the other apparently quite sound and healthy." The value of mercury, as a test, has long since been settled, and need not occupy our time. Are we not, therefore, justified in assuming that a *positive* test of syphilis remains to be discovered?—G. C. B.

* Hunter, (by Babington, *Am. Ed.* pp. 20, 31.)

formula somewhat absolute, could be based. We shall see that M. Ricord, in admitting more recently the possibility of inoculating animals with chancre, himself annuls this law, and in so doing makes a breach in his own system.

M. Cullerier has also made numerous experiments, which he has been particular to relate. These experiments were performed in part with the assistance even of M. Auzias, and M. Cullerier says that he has failed. For my part, I think that my honorable colleague has not always failed. But these experiments are detailed and published, and the public can judge for themselves. Almost all are negative.

M. Auzias himself has met with numerous failures; but, in certain cases, he has succeeded, as have MM. Langlebert and Diday. The experiments of this last physician, those of M. Robert de Weltz, leave no doubt of the possibility of transmitting chancre to the brute; and chancre, according to M. Ricord, is the essence of primary syphilis. M. Langlebert, in describing his experiments to show the efficacy of a prophylactic, positively asserts: "I scraped the left arm with a lancet which had been dipped in the same pus, the virulence of which I had proved by inoculating a monkey which had a perfectly developed chancre.* I have seen, on the arm of M. Robert de Weltz, a well-marked chancre, which was inoculated by M. Ricord himself, who took the pus from a chancre on a monkey. M. Robert was already inoculated with a chancre from pus derived from the same source. After these results, M. Ricord presented the hardy German physician to the students who attend his course, and in their presence declared, "that the experiments of M. Auzias Turenne had fully succeeded, and that the two ulcerations with which I was affected were true chancres." These are the very wards of M. Robert de Weltz himself.† M. Diday also experimented; he inoculated a cat with pus from a chancre of the second generation on the same animal, having applied it to the prepuce; and from this proceeding resulted a very serious phagedenic chancre. With the pus from chancre, M. Diday inoculated two rabbits on the ear, with success; one of these chancres became indurated.‡ The experiments of M. Diday, which are fully detailed in the journal quoted, leave no room for doubt.

The following is the proceeding of M. Auzias, as described by himself. This physician chose the central part of the pavilion of the ear, being that possessed of the greatest vitality. "My place of election was the mastoid surface of the pavilion of the ear. The principal reasons for so doing were the following:

"1, The part is easy of management; 2, the animal cannot lick it; 3, it does not see our manipulations, consequently it labors under no fear; 4, the cellular tissue of this part being loose and serous, we may easily perceive induration, when it assumes a de-

* A Letter addressed to the Academy of Medicine, July 22, 1851.

† Vide *De l'Inoculation de la Syphilis aux Animaux*, (*extrait de la Gazette Medicale*, ann. 1850.)

‡ Vide *Gazette Medicale de Paris*, Dec. 22, 1851.

cided character. The induration, in my opinion, is the rule, and not the exception. This is a point, the explanation of which I reserve for further consideration. Two instruments only are required for this operation.

"1. A spatula, or some flat instrument, to take up the pus, and to apply it to the part to be inoculated.

"2. Small scissors curved on the flat surface, and pointed.

"I much prefer this instrument to the lancet. The puncture of the lancet excites in the animal a sudden movement, which it is important for the precision of the operation, and the security of the operator to avoid. The animal, on the contrary, appears not to feel the action of the scissors, which, besides, we are always able to control.

"If the animal is troublesome, I have it held, while I shave the part selected, to the extent required. The excision of the hair with the curved scissors is a still more simple proceeding. The following is the operation:

"With the point of the scissors, I remove the epidermis to the extent of two-fifths of a line. The more superficial the incision, provided the epidermis is excised, the better the operation succeeds. If blood is drawn, I consider its success compromised, and I repeat the operation in another place. Sometimes I make several sections at certain distances from each other.

"On the denuded portion of the dermis, I deposit the pus from a chancre, either pure, or mixed with a small quantity of saliva.

"3. For a minute I keep the part moist, either by means of the pus or saliva; at the same time I rub with a blunt instrument the periphery of the part.

"In the next place, I abandon the animal to itself.

"I never fear mixing the pus with saliva, whenever it is not sufficiently abundant to carry it away. The important point is, that a certain degree of humidity prevents the coagulation of the fluids, by which the virus would become imprisoned.

"The day after this trifling operation, a pimple appears at the point inoculated. On the next a vesicle, which, in twenty-four hours, becomes converted into a pustule. These phenomena, perfectly regular, require more or less time for their production. Finally, the perfection of this evolution is a chancre covered with a crust or scab. This chancre becomes round, excavated, and increases in extent: a pus, abundant in quantity and of a deep color, raises the scab, and the epidermis to a certain distance from the scab. The adjoining skin is hot, red, and tumefied. The abundance of the pus, which occupies and irritates the parts, induces the animal to scratch itself, and this fluid passes under the edges of the scab, which it raises and detaches. As soon as a certain quantity has escaped, the parts are rendered less tense. The edges of the scab become glued again, or if it has been carried away, a new scab is formed. The epidermis retracts, and shrinks concentrically to the chancre, and is detached by pellicles. The chancre then progresses for several days, and the order of the latter phenomena (I mean those which follow the pustule) is repeated several times. The

ulceration is finally arrested; it gradually diminishes in size, and at length disappears, having constantly retained the physiognomy and characteristics of chancre of the skin."

M. Ricord has entertained several opinions on the results of inoculation in animals, as he has upon almost all the important questions in syphilography. At first he denied the results, then he admitted and proclaimed in full clinique the success of M. Auzias. But soon retracing his steps, and finding the theory of transplantation already made by M. Cullerier, he seizes upon it, without claiming aught of the invention, showing for once the good sense of my colleague. According to this hypothesis, the ulceration produced on the animal was not specific; it was a wound like any other in which virulent pus is deposited; only it is a soil, in which it cannot germinate; it may germinate when transplanted into another soil, such as that furnished by the human system. I should add, that I have myself heard M. Ricord abandon this theory, an act which has greatly amused M. Malgaigne. Now, indeed, M. Ricord admits chancre in the brute, that is, primary syphilis, but not the consecutive disease. Thus, then, we behold a law abrogated even by the legislator himself.*

We may here insert with propriety part of a discourse pronounced by M. Malgaigne before the Academy of Medicine during the discussion of the subject of syphilization, a discourse which, as has been remarked, formed an event. M. Malgaigne produced a profound sensation, especially when he attacked the system of M. Ricord. The friendship which for twenty years had united these academicians, and the well-merited eulogies which, on several occasions, had been mutually pronounced on each other, were known. M. Malgaigne could not therefore be suspected of anything like hostile feelings. Now, listen to the words of this eloquent professor: "Often had I seen the doctrine of M. Ricord vigorously attacked; and often these attacks had revived my doubts; never had I seen him conquered, forced to beat a retreat, still less to surrender. That time, gentlemen, has arrived. One of the doctrinal points of M. Ricord is that syphilis belongs exclusively to man, that it cannot be communicated to animals. I will not go back to the first experiments of M. Auzias: for a long time their results were denied; I myself plead guilty to a part of this injustice. On another occasion I have said, When we have produced chancres in the monkey, *what then?* Such prejudice, gentlemen, is to be regretted; a fact is a fact, though it may remain for a long time unapplied; but most frequently this apparent inutility but proves our ignorance of its relations. For myself, I have already stated, this fact is henceforth incontestable. In listening to the discourse of M. Ricord, I could not discover

* We are informed by M. Sperino, in his recently-published work (1853) on "*Syphilization*," p. 27, that M. Sigmund, of Vienna, has successfully inoculated warm-blooded animals, and that in the dog, rabbit, and horse, the primary accidents were followed by a syphilitic eruption. On the same page, he gives the details of a case in which he himself successfully inoculated the horse. This question would, therefore, seem to be definitely settled.—G. C. B.

whether he admitted or rejected it. (M. Ricord: *I admit it.*) I am then most happy to find myself once more in unison with him. But if he admits it, should he not spare those sarcastics attacks by the aid of which he seems to struggle against his own true convictions, and to cease to bring forward still that strange theory of transplantation, which, in eccentricity surely, does not yield to any among the advocates of syphilization.

"This fact, so puerile in appearance, was the first breach in the system of M. Ricord. For the first time, he was conquered, and, mark it well, he now found himself attacked with the same weapon which had so often enabled him to conquer, viz., experiment!"

SYPHILIZATION.

I shall not repeat the declamations which have been made against syphilization. I will not defend it. I shall attempt only to ascertain whether, from all this agitation, from all the experiments to which syphilization has given rise, some facts have not been elicited, some light been shed, by which the advance of science may be promoted.

According to M. Auzias, "*Syphilization* is a condition of the organism, in which, owing to a kind of saturation, the phenomena of syphilis can no longer be evolved. This same experimenter employs the word *syphilisme* to denote the capability of being syphilized; we may say, for example, of an individual, that the degree of *syphilism* which he possesses, is in proportion to the facility with which he may be syphilized." I copy literally from M. Auzias.

Syphilization is produced by inoculating a certain number of chancres, which perform the part of the vaccine pustule; they vaccinate them, that is, they produce an exemption from syphilis. Starting from this hypothesis, chancres have been given to sound individuals with a prophylactic end, to exempt them from the liability, not only of primitive, but consecutive accidents. Then the *syphilizers*, having imagined that "the syphilitic virus was the best remedy against the action of the syphilitic virus," they have proposed to syphilize, that is, to inoculate chancres with a therapeutic end, to cure syphilis, both primitive and consecutive. This double application of syphilization has been particularly defended by MM. Auzias and Sperino. M. Marchal confines himself to a recommendation of curative syphilization.

M. Diday has invented another vaccination. Believing in the unity of syphilis, he would subject it to the same laws which govern variola, rubeola, &c., by which a person can be affected but once during life, and the surgeon of Lyons has inoculated not only chancre, but the blood of individuals in the last stages of syphilis, or rather, who are laboring under a constitutional condition which will no longer tolerate the syphilitic action. The first system, that of the inoculation of chancre, has roused the passions and the indignation of learned societies and the press. The

second, that of vaccination with the blood of a patient affected with tertiary symptoms, has been regarded as the dream of an honest man, and has been passed over in silence.* Even before the sixteenth century, the consoling idea was entertained of the disappearance of syphilis, by the exhaustion of the virus, or the saturation of the human race. Thus the *universal syphilization* which this good M. Auzias would now realize, was long since announced to us. In the work of Astruc we may find this opinion often expressed: "The venereal disease, having had a beginning, should have an end." It is known that Astruc was an advocate of the modern origin of syphilis. What is regarded as being favorable to this author's opinion is, that time diminishes the virulence of syphilis, which at present is more benign than it was formerly. Its effects being really less deplorable than at the end of the fifteenth century, hopes were therefore indulged of its complete extinction. But, to share in this hope, and to adopt the hypothesis of Astruc, we must also accept his erroneous opinion on the origin of the disease; for, if it be really of ancient origin, the question changes, as it has lost nothing of its force in descending towards us; on the contrary, at certain epochs it has assumed an aggravated form, particularly during the close of the fifteenth century.

After the idea of universal saturation. followed that of the saturation of certain nations; and I will soon show that the human race may be both partially and generally saturated. Swediaur among modern writers has most clearly expressed this idea of the saturation or syphilization of certain nations. Thus, according to his views, the virus imported into a country yet uncontaminated, whatever its climate may be, produces at first very violent effects upon its population; effects which gradually diminish, because the people become more or less saturated: the disease loses its violence. But, he justly observes, if a foreign people invade a country in progress of *syphilization*, its victory is dearly purchased. Thus the Portuguese became gradually *syphilized* by long familiarity with the disease, and yet they transmitted it to the English invaders in all its virulence.

These facts when not closely examined, and whilst yet in their rough state, seem favorable to the modern doctrine of syphilization. But the question here arises, are there countries free from syphilis. The varieties produced by difference of climate and of regimen, in the manifestations of the disease, will hereafter be noticed. Thus, an army in a foreign land always suffers more than the natives, from the diseases of the country, and generally it finds less assistance, is less acquainted with the means of protection, and the best modes of treatment; hence the aggravation of the symptoms, by which attention is most directed to the strangers. The natives, on the other hand, more easily escape observation. The treatment followed, and the malady itself exhibiting less virulence in them, excite but little notice.

* Vide my *Lettres sur les Inoculations Syphilitiques.*

However, I would not absolutely deny the syphilization even of a people, for analogy, although remote, sanctions its admission. There are natural facts respecting the saturation of soils, which may daily be observed; thus, seed committed to the same soil for two successive years begins to degenerate; if it be not changed, if the soil be not allowed to rest, the results are hybrid and even naught, for the seed will not germinate. But let the soil rest, and in the language of the agriculturist, let it lie fallow for some years, then we shall find that the same seed which the soil refused, germinates better than before.

It may be the same with the organism, which becomes insensible to a poison, to which as it were it has been accustomed, and which, after a certain repose, will not be the less susceptible to the influence of the same poison. We find, therefore, that saturation considered in the most general manner, presents characters which are neither definite, nor absolute. As the soil which permits not the germination of one kind of grain, shows itself favorable to that of another, it is possible that the organism insensible to one virus or one quality of virus, may be affected by another kind. Thus, if there were several kinds of virus, the question of syphilization would be much less complicated, much less obscure, than it is according to the hypothesis of a single virus, which leaves it in very great perplexity.

Instead of inveighing furiously against the advocates of *syphilization*, I have observed, with their hypotheses in view, in order that I might decide coolly and philosophically. Now, a fact which in my opinion is unquestionable, is the syphilization of a certain sphere; in fine, local syphilization. Thus, I have seen a very active chancre on the summit of the glans secreting pus which was diffused over the rest of the organ, bathing the whole prepuce, which was much elongated, and yet these parts were not inoculated. This same pus imbrued the penis and the scrotum, which resisted its action. But one day there appeared on the superior and internal part of the thigh, a well-marked chancre which furnished an inoculable pus. It was produced by the end of the penis which several times rested in contact with this part of the thigh. Thus, the same pus which on the genital organs was inert, had inoculated the thigh. The genital sphere was here *syphilized*, in other words, it was under the influence of a vital reaction, which resisted the extension of the ulceration on the summit of the glans, as well as the production of other chancres. It was the same prophylactic power that prevented M. Sperino from prolonging the ulcerative stage of a chancre by the application for six days of virulent pus, because it was in the reparative stage. This kind of local syphilization must, in all cases, be admitted, otherwise every chancre would increase indefinitely, it would know no limits. The more decided this local syphilization, the more limited the chancre; phagedenic ulceration shows the absence in a certain sphere of this syphilization. But let it not be supposed, on this account, that syphilization is permanent. These same parts, this same sphere, which in the patient above men-

tioned could not be inoculated by the pus of the chancre on the summit of the glans, became so one month afterwards from an impure coïtus. This patient, in fact, left the hospital cured of his first chancre; but, in one month, after a single connection, returned with three chancres on the prepuce, of which one was three times the size of that of the former one on the glans. Here we find a part at one time effectually resisting the action of the virus with which it was in contact, and yet at a later period, becoming inoculated with several chancres from a single coïtus! This case furnishes one of the strongest proofs of the possibility of local syphilization, but at the same time, a proof of the short duration of the immunity produced by it. The case proves also that second chancres may be more numerous, and larger than the first, contrary to the opinion which has been entertained, that the ulceration of chancre becomes more limited in extent, in proportion to the frequency of its occurrence.

Had these facts in local syphilization been known by those experimenters who have inoculated subjects that presented themselves as individuals who had been syphilized, they would have applied their lancets to some point remote from the sphere already inoculated, and would thus have avoided some mistakes to which they have appeared very sensitive.

It will be perceived, that by greatly multiplying chancres in several different regions, we may arrive at a general syphilization. This effect may even be obtained by inoculations less numerous and limited to one or two regions; thus, it is evident that M. Laval * was completely syphilized by inoculations practised on the superior extremities.

Those who have followed the discussions in the Academy on syphilization, know that the case of M. Laval has been differently interpreted. This young *confrere* has served for the battle-field between M. Auzias and M. Ricord. More than two hundred spectators have witnessed this contest; it has been fought, as is always agreeable to M. Ricord, *coram populo*, and yet we know not who has been the victor! But of one thing I am perfectly convinced, viz. that M. Laval has been inoculated by our honorable colleague, M. Gosselin, and that too with pus which readily produced chancres on a woman at the *Lourcine* affected with syphilis, whom they proposed to treat by syphilization. Now, this same pus remained impotent, inert, when it was inserted beneath the skin of M. Laval, and this too, after three inoculations. This fact was communicated to me by M. Gosselin himself, and I believe it as fully as though I myself had performed the experiment; for, besides his knowledge and integrity, this colleague cannot be accused of being a partisan of syphilization, since the only part which he took in the debates, was to give publicity to a fact which is unfavorable to the system. Indeed, M. Gosselin has published the case of this same woman on whom he succeeded in inoculating

* M. Laval, now a doctor in Medicine, was syphilized whilst he was a student, and he defended a Thesis on the subject of syphilization.

chancres, and he has shown that her disease only increased during these inoculations.

It may be answered, that if the fact of the patient's system being already infected is unfavorable to curative syphilization, that of M. Laval is decidedly in favor of prophylactic syphilization. But a distinction must be made between temporary and permanent immunity. For example, this same *confrere*, M. Laval, who with impunity defied the lancet of MM. Ricord, Gosselin, and other experimenters, has at length been lately inoculated with success, at least M. Ricord has so stated to the whole Academy. And here I have no hesitation in believing M. Ricord, for the fact which he has related, was under my own observation. Perhaps what I have mentioned respecting the saturation of the soil, when the same seed has several times been sown upon it, may be recollected; in that case it produces only hybrids, and ends by refusing all germination. But, after a certain period of repose, this same soil is no less favorable to the germination of the seed, than it was before inert. I believe therefore that the system of M. Laval had been placed in the same condition as the soil of which I have spoken: after the labors of M. Auzias with the lancet, it yielded only hybrid products, pustules which never became chancres; then it became totaly barren. But after a certain period of repose, M. Laval's system became like that of most men, susceptible to the action of the virus. I have said, like that of most men, and not of all, because in certain subjects there may exist an immunity, natural or acquired, as is the case with other morbid poisons.

The fact, that persons are often exposed with impunity to syphilitic contagion, is known, though in a vague manner, to every practitioner. I will here particularize one which at the time made a strong impression on my mind.

A man who acted a certain part in the revolutions of 1830 and 1848 (he is known to many of my *confrères* who mingled in the debate on syphilization), had a remarkably fine and robust constitution. He was a great libertine, and not at all particular with what females he had connection. He never, however, became infected, as was frequently the case with his friends who had intercourse with the same woman, for I was often called upon to treat them. Having became acquainted with the fact, and knowing well this *brazen* man, as he was called, it happened that I attended two flower-girls with whom he had had habitual connection, which girls had inoculated other persons. They both had chancres. I sought no further proof, and believed in this man's immunity. However, he made his boasts that he could not catch the pox; some one offered to give it to him provided that he would consent to submit to a trifling experiment, a proposition which he at once accepted; two inoculations were made on his arm with pus taken from a chancre then in a progressive state, but without effect, absolutely without any result whatever.

Here then was a natural immunity resembling that produced in M. Laval, and still more complete, for Mr. Laval was subjected only to experimental inoculation, whilst this person was exposed to

physiological inoculation, to true contagion. But time may work a change in this man's constitution, or from circumstances impossible now to be appreciated, he may become as vulnerable as M. Laval.

Thus the fact of a temporary immunity, established by observation, and by experiment, is of importance, especially from its bearing on that system in syphilography which is based upon inoculation.

We may here with propriety insert an extract from the discourse of M. Malgaigne pronounced before the Academy of Medicine, on the question of syphilization. M. Malgaigne, alluding to the natural immunity possessed by certain individuals, proceeds: "Now, can this immunity be artificially produced? Henceforth, the reply to this question cannot be in the negative; and I am surprised that the orators on the part of the commission, should have thrown so entirely into the shade, a fact of such capital importance. You remember the case of the patient of M. Marchal (de Calvi); he presented this condition of immunity. How rapidly M. Ricord passed over this subject! The patient of M. Telaschi, so often referred to, had acquired the same immunity: neither M. Ricord nor M. Begin have noticed it; their attention was called to it by M. de Castelnau, who, however, can never be ranked among the partisans of syphilization. And then there is the case of M. Laval. We shall come to that in a moment gentlemen, but I must reply to a previous objection.

"Supposing the fact to be well demonstrated, after all what consequence is it? Those who propose such a question cannot be very thoroughly acquainted with the actual state of the science on this subject. I have briefly pointed out some of the most important doctrines of M. Ricord; for the most part, gentlemen, they rest at a greater or less distance, on a common basis, that is, inoculation limited to the pus of chancre, and the impossibility of resisting the action of this pus. Here are no circumlocutions, no doubtful expressions. *The pus of chancre*, says M. Ricord, *is inevitably inoculable.* The matter of variola and vaccina finds those who absolutely resist its action, the pus of chancre none. This doctrine he has admirably expressed by a kind of aphorism so forcible in its conciseness. *All men are equal before chancre.* It was, as you will observe, a kind of political constitution which he imposed upon syphilis, it was his constitutional chart.

"Now, behold, on a certain day, he is startled by a revolutionary fact, which suddenly breaks down this promised equality, rends his chart, and subjects his patients to other laws. I can well understand then gentlemen, why this legislator has resisted this new fact: I appreciate his warlike ardor; I comprehend why he would have his battle of Saltzbach, and why before this tribunal he has attempted, to use his own words, *a new campaign in Italy.* This resistance, moreover, was not shown during the discussion which really drew forth this fact. At the first announcement of the threatening immunity, he entered his protest, and the amphitheatre of the *hôpital du Midi* re-echoed his defiance, his challenges. Besides, it was for its verification that he provoked his adversaries.

'I wait,' he remarked, 'that they may show me an individual syphilized and insusceptible of the action of the virus, who will go before the *clinique* of the *hôpital du Midi, and defy me in camp with weapons of my choice!*'

"This challenge was repeated on the 12th August by the *Union Medicale*. On the 22d Aug. M. Auzias accepted it; on the 23d Sept. M. Ricord declared that he was waiting. The Editor of the *Union Medicale* exclaimed: *Facts, facts!* give us, rather than theories! And then, gentlemen, then the 4th November M. Ricord proclaimed that the experiments had been commenced, and that the result would be communicated to the journal. Search it well, and this communication cannot be found. Eight days afterwards M. Ricord presented M. L. to the Surgical Society, and on the 18th November to the Academy of Medicine. But not one word about the experiments. On the 20th, M. Latour gave the case of M. L. as the only public and authentic experiment then known. As if to break this silence, on the 9th December M. Marchal wrote to the *Gazette des Hôpitaux* that *M. Laval had presented himself to M. Ricord, that the latter had made on him, at two different localities, seven punctures, and had inserted three kinds of pus, of undoubted virulence, without any results.* M. Ricord made no reply; the *Union Medicale* lisped not a word. You are aware that the report of the committee maintained the same silence.

"For myself, gentlemen, this silence amounts to a defeat, and yet, I should have preferred a frank and public acknowledgment. For this reason I have provoked explanations upon this point. They have come from various sources; I will not dwell upon them; I wish to speak of M. Ricord. And what has he told us? That he produced on M. Laval an ecthymatous pustule so well marked as to require no counter proof, and that the other inoculations which had failed on the person syphilized, had also failed on those from whom the matter was taken. No other details. M. Ricord declared that he should be wanting in dignity to say more. This course, gentlemen, does not satisfy me. What connection can there be between M. Ricord's dignity and the details of an experiment? In all, from his own admission, on his own ground, *in camp*, and with weapons of his choice, he succeeded but once in seven inoculations. But other patients were equally refractory, thus showing that his pus was not good. Who could have believed, gentlemen, that M. Ricord, after so solemn a defiance, in his vast field, would be under the necessity of saying that he could not find good pus? But, at last, an inoculation has succeeded. Succeeded! when you yourself, sir, have not made the counter-proof which on all occasions you declare to be indispensable, in order to know that the pus produced can be re-inoculated. For my own part, gentlemen, I consider this acquired immunity in certain persons as proved, demonstrated, and incontestable. If M. Ricord still has doubts upon the subject, I pledge myself to furnish him with all the elements required for conviction. If the committee consent to witness the experiments, I pledge my honor to bring forward a young man who professes to be syphilized, and

who defies M. Ricord to produce on him a single atom of inoculable pus. M. Ricord shall take his precautions; and if he fails the first time, he can try again; my subject declares his readiness to submit to twelve hundred inoculations, and even more if it be required. Now I trust that no person will deny the facts without subjecting it to the test. Here, then, is a truth of capital importance elicited by this discussion. You have read the excellent treatise of M. Ricord on syphilitic inoculation; you have seen the valuable results which he has obtained in diagnosis, prognosis, and therapeutics; you will recall to mind his nice deductions in legal medicine; all these are shaken, all totter when chancre is no longer fatally inoculable; diagnosis becomes uncertain, prognosis deceptive, and treatment doubtful; above all, can legal medicine, which requires absolute certainty, longer dare to trust, as heretofore, to inoculation? These remarks apply directly to primary syphilis only; there is reason to apprehend that the system is soon to suffer another check as regards constitutional syphilis."*

This part of M. Malgaigne's discourse produced a profound sensation. M. Castelnau, who, in the *Gazette des Hôpitaux*, had warmly defended M. Ricord, in this contest with the partisans of syphilization, in the same journal addressed a letter to M. Malgaigne, in which we find the following passage, showing some modification in his views: "Yes, you have had reason to insist upon the fact that the pus of chancre is not fatally inoculable, even when it is contagious, and that certain individuals, either from accident or idiosyncrasy, are not susceptible of its action; you had reason to proclaim boldly that this is a fact of capital importance, subverting, as it does, the ingenious scaffolding of our illustrious confrére, M. Ricord." (*Gazette des Hôpitaux*, Aug. 26th, 1852.) This is the result of the efforts made to establish an imaginary system; the object could not be accomplished, but another resting upon a false basis has been overthrown. It is not the first instance in which the object sought has not been found, but in its place something of more value has been discovered.

Again, to justify prophylactic syphilization, we must first establish the unity of the syphilitic virus, and the necessity of subjecting the organism to this saturation; it is necessary, in fine, that the analogy between syphilis and variola should be complete. Now, in the second part of this work, we shall find the experimental and logical proof of the possibility of several attacks of constitutional syphilis. Of this we may become convinced by what has been said of the temporary saturation of the system, and of the susceptibility which it again acquires of being infected by the disease. Thus, as I have already stated, the person whom we would syphilize may really have the malady that we would give him, and that which he might otherwise contract. That syphilis will inevitably follow contagion is far from being established. On the contrary, it has been found that the half of those most exposed escape, a fact observed by Parent Duchâtelet. It would therefore

* *Bulletin de l'Académie de Médecine*, t. xvii. p. 1046.

be irrational and inhuman to give positively to an individual a disease to protect him from that to which he is not fatally condemned. Prophylactic syphilization, therefore, is an irrational project.

As to curative syphilization, I have carefully examined the arguments adduced *pro et contra*, and in my estimation they are yet insufficient to decide the question. For example, M. Telaschi treated a phagedenic chancre, which, it is asserted, had been aggravated by cauterization. It was of thirty-six days' duration. Nineteen inoculations were made, yet the chancre continued to progress. An eruption and osteocopes supervened. M. Sperino, a surgeon of note, and well versed in this subject, directed a renewal of the inoculations. In the course of eight days forty-three of these were made. On the twelfth day, the progress of the eruption was arrested, and the pains had diminished. On the seventeenth, the pain had increased; the chancre began to cicatrize, and in less than two months the cure was complete. This is the report of the case as presented by the partisans of syphilization. Observe, it is that of a chancre which in two months became cicatrized, of a syphilide which was arrested, and of osteocopes which were mitigated, all of which might have occurred in the complete absence of treatment. I do not regard this, with M. Ricord, as a *lamentable* case, but it certainly deserves not to be called admirable, as some advocates of syphilization would seem to imagine. That furnished by M. Marchal (de Calvi) of a patient who had been for a long time diseased, and who had taken iodide of potassium and mercury without benefit, was one of tubercular ulceration of the tongue, was improved in four or five days by inoculation, and seems to me worthy of attention. But the occurrence of spontaneous and even rapid cures after the discontinuance of all treatment, greatly modifies the importance of this case. It should be observed, besides, that this patient was not cured, as there was a relapse.

In another part of this work, we have recorded the remarkable case of a barber, affected with a consecutive ulceration, which involved nearly the whole external surface of the inferior extremity. Every effort was made to arrest and to cure this painful and debilitating ulcer. Combinations of mercury, iodine and iron, cod liver oil, and different topical applications, were tried in vain. It was then proposed to syphilize this patient. I replied that he had sufficiently syphilized himself, and I applied narrow bands of emplastrum, "de vigo" plasters, folding them one over another, as in the method of dressing *par occlusion*, and in less than a month this patient was cured. This fortunate result may fairly be attributed to the absorption, by a large surface, of the mercury contained in the plaster.* But perhaps it may be said that in this instance the reparative stage of the ulcer had arrived, that the system was in a condition to react effectively, and that nature alone had effected a cure. Had I syphilized this patient he would

* Something similar to the Emp. ammon. cum hydrarg.—G. C. B.

have been cured; it may be a little less rapidly, but still he would have been cured; and then!—From what I have stated the reader may surmise my views on the so-called lamentable cases of syphilization, which cases may have been unfortunate, independent of syphilization. Thus M. Laval, whose name is so frequently mentioned in this work, this German physician, who has been pronounced the victim of syphilization, became infected from the matter of a consecutive accident in one of his *confreres*. After the inoculation a papular eruption appeared, which he desired to be treated by the successive inoculations of several varieties of chancrous pus. In this manner he produced on himself an infinite number of chancres. The progress of his disease, however, was not arrested, as would probably have been the case had he not been inoculated, and especially if he had followed no plan of treatment. The facts yet produced by this prophylactic or curative syphilization are far from entitling it to a place in medical science, but may be of real value in assisting to destroy a system resting on a false basis.*

TRANSMISSIBILITY OF SECONDARY ACCIDENTS.

This question, viewed in connection with public or private hygiene, is one of vast importance; it presents itself daily in ordinary practice, and not unfrequently in courts of justice. Regarded purely in its scientific bearings, it is one of the most interesting in etiology.

The earlier writers on syphilis believed that the disease might be communicated by everything which surrounds, and by all that is within man; thus, they supposed that the atmosphere, every emanation from the body, the breath, perspiration, the natural or morbid secretions, the blood, in fine that anything might serve as a vehicle for the poison. Syphilis was regarded as an epidemic, and capable of being propagated in every possible manner. With such views, they must have admitted for facts fictions, sometimes absurd, as for example, that it might be communicated through the grates of a confessional, by the perfume of a bouquet, and a minister was actually put to death, because, knowing that he had the disease, he had dared, nevertheless, to breathe into the ear of the king.

The absurdity of such notions was early discovered, and it was exposed even by Fernel; at a later period they were attacked, and

* The *Treatise* of M. Sperino, to which we have already alluded, contains the results of some 94 cases of *syphilization*, performed for *curative* purposes, which results this surgeon regards as highly favorable to the practice. Permission having been granted by the Government to institute a series of experiments on this subject, M. Sperino, who is at the head of the venereal hospital at Turin, immediately availed himself of the means at his disposal, and in his elaborate work, the reader interested in this matter will find copious details. Fifty-three of these 94 cases were primary syphilis, the remainder being constitutional syphilis. Fifty of the former, and twenty-five of the latter cases are reported as cured! But we must refer the reader to the work itself, and will only add that *syphilization*, as yet, has found but few if any advocates either in Great Britain or this country.—G. C. B.

in our own day tne truth has been revealed. Not only has the idea of an epidemic and fantastic contagion been abandoned, but some have gone so far as to admit but one mode of propagation, but one vehicle of the poison, viz. the pus of chancre. Thus, the atmosphere, the human breath, and perspiration are very properly no longer regarded as the mediums of propagating the poison, but with these some would include the blood, the normal secretions, as well as those that are morbid, except pus, a question which is by no means settled, as Hunter and his disciples would seem to believe. According to M. Ricord, who has given an absolute character to the doctrines of his master, infection can occur only from the matter secreted by a chancre, which matter alone is the medium of the virus; the latter can enter the system only by a chancre, and its infecting properties do not reach beyond the first lymphatic ganglion in direct relation with the chancrous surface. Beyond this ganglion, the virus may still injuriously affect the individual inoculated, producing secondary symptoms, such as pustules and syphilitic ulcers over his body, but can do no harm to others, as it no longer exists as a contagious agent. Of course, if but one individual could be found, whose chancres had cicatrized, but who was still covered with ulcers and pustules, who, in fine, was completely saturated with syphilis, the disease would die with him, he could not communicate it to those thrown into contact the most frequent, intimate and prolonged, and the syphilization of the world would then be complete! This is the latest doctrine advanced by the disciples of Hunter. But a grave and incontestable fact here presents itself, it is that of the infection of the child in its mother's womb, a fact admitted by all syphilographers. It is unquestionable, that a woman, having neither chancre nor bubo, but that form of syphilis only, which it is asserted, can no longer be infectious, may give birth to syphilitic children, which may infect their nurses, whilst the latter, in turn, may communicate the disease to their families. This is the same syphilis that should have disappeared with the cicatrization of the last chancre, but which here reappears and recommences its ravages. The principle of contagion may therefore exist elsewhere than in the pus of chancre, and other than the primary ulceration.

Analogy could not fail to seize upon a fact so widely known, and should have led to its admission, since, even after the cicatrization of a chancre, the system may still contain an infectious principle capable of being transmitted to another being; by multiplying the relations, diversifying the experiments, and employing different humors, we may expect to prove the transmissibility of syphilitic accidents independent of chancre or its products. Observation here confirming analogy should have anticipated the results of experiment, and, doubtless, in any other epoch than the present, would have rendered it unnecessary, for the instances of the infection of the nurse by the child, which is seldom affected with other than secondary accidents, are exceedingly numerous, and MM. Bouchacourt and Bardinet *de Limoges*, have recently reported cases with details so precise as to leave no room for doubt. Again, the

transmissibility of the mucous tubercle by means of intimate relations and contact is generally admitted. On this subject the works of MM. Lagneau, Baumés, Cazenave, Gibert, and of other unprejudiced observers, may be consulted. Among the patients which come under the practitioner's care, opportunities will occur, if the two be treated together, of seeing the mucous tubercle in both, in its different stages of origin, seat, and isolation from other accidents, thus removing all doubts of its contagious character. In another place I shall appeal to M. Ricord himself. We shall find that he admits the infection of the nurse by the child,* and the contagiousness of the mucous tubercle in the adult, but, as he expresses himself in his *Treatise*, it is by some incomprehensible vital process.† He admits contagion only, that is, physiological inoculation, and still denies the fact of experimental inoculation.

As it is chiefly with contagion itself that we are now concerned, and not with this or that method of it, in my opinion the question is settled by M. Ricord's own admission, and for this reason, I am the more astonished that he still persists in opposing my views. Thus, the clinical fact is known even to my opponent, that secondary accidents are contagious, since M. Ricord acknowledges the contagion of the mucous tubercle, an accident which he classes among those regarded by him as secondary. It remained, however, to establish the fact by experiment, a matter of importance in an age so given to experiment. I cannot too often repeat, that for those whose minds have been trained to observation and legitimate induction, the question needed no experimental proof. But for the school, especially as it was not long ago, we were compelled to descend to experiment. I have experimented, and for the first time in France, have succeeded in inoculating the pustule of secondary ecthyma.

At the simple announcement of this result, whilst the case was still in my *cartons*, the attacks commenced, and they were directed chiefly against the experimenter. I saw the position in which they would place me, and for a long time I submitted in silence, knowing that sooner or later the end would come, and I continued to observe, to experiment. During this period, men of independent minds, whose attention had been awakened to the subject, also observed and experimented; they were attacked in the same manner. In the body of this work may be found, indeed, an account of observations made in Paris, and in Germany, observations which accord entirely with my own. These formed the basis of an essay which I read to the surgical society, and which drew forth a discussion. At a later period, a German physician was presented to the Academy of Medicine, who had inoculated himself with a consecutive affection; this gave rise to another discussion, the results of which, in the estimation of every unprejudiced person, must have been a condemnation of the doctrines I oppose.

* Vid. section of this work on *Infantile Syphilis*, p.
† Vid. p. 182, of M. Ricord's *Treatise*.

Objections have been made to the small number of facts which experimentally prove the transmissibility of the secondary accidents. It has been stated, especially by M. Ricord, that if these accidents can be inoculated once, they can always be inoculated. Now, it is not correct to say that the facts of inoculation are rare. A different impression will follow the perusal of the writings of Wallace, reprinted in the *Annales des Maladies de la peau et de la syphilis*, as well as of the contents of this book. These facts, as my opponents have lately been forced to admit, are rare and exceptional, only when they chance to possess great weight in this question. It is well known, indeed, that all the negative facts in the world cannot destroy one positive fact. M. Diday, whom M. Ricord persists in citing as a partisan of his doctrine, referring to the experiments by which Wallace proved the transmissibility of the secondary accidents, remarks: "These cases are not very numerous, but more are not required to shake the security which reposes on negative facts."* †

M. Ricord, who had asserted before the Surgical Society, that if the secondary accidents could once be inoculated, they could always be inoculated, no longer repeats this argument before the Academy of Medicine, because, during the interval which passed between the two discussions, the question was settled experimentally, since which he has been silent on this point.

It has been proved, to my certain knowledge, that chancre, even when inoculated according to the most approved method, and by the most skilful experimenter, is not always reproduced. Chancre, then, can be transmitted only under certain conditions. Now, the same observations should apply to the secondary accidents. However, as the principal conditions which are favorable to the success of the inoculation of a chancre are known,—witness the great number of experiments already made for this purpose—those which affect that of the secondary accidents have been less studied, and are almost completely unknown. Further, the secondary affection, which should be especially inoculable, is that which is of a purulent character; now, this is represented by ecthyma, which is rare. This form of cutaneous disease consists of several varieties; there is one which appears shortly after the chancre is healed; it resembles varicella; the pustules have a thin scab, which, in falling, leave no ulceration, or that but trifling. I am almost certain that this variety is more easily inoculable than that which appears at a later period, when there exists an affection of the bones; the number of pustules is then very limited; they are to be found principally on the extremities, the legs; they are very large, and

* *Gazette Medicale*, Oct. 6, 1849. We are also indebted to M. Diday for the publication of the most conclusive fact concerning the inoculation of chancre in the brute, a fact denied by M. Ricord.

† Dr. Skae successfully inoculated four out of thirty-six cases of mucous tubercles.—*Northern Journal of Medicine*, April 1844, or Cormack's *Lond. and Ed. Monthly Journal*, July 1844, p. 620. M. Sperino (*op. cit.* p. 502), refers to other successful inoculations of secondary accidents not alluded to by our author; they were made by MM. Sigmund, of Vienna, and Gamberino and Galligo, of Italy.—G. C. B.

their thick scab, in falling, leaves a deep ulcer. Thus, the conditions required for the inoculation of the secondary affections being almost completely unknown, and these affections which are inoculable, being themselves rare, the experiments on the subject, unlike those on chancre, being also of recent date, the success obtained in the one case forms no criterion by which we may judge of that in the other.

I am satisfied that certain non-syphilitic affections, which are regarded as not admitting of inoculation, would become so, could we but seize on the right moment when they contain inoculable matter. Thus, at present, when attempts have been made to inoculate chancre, the ichorous discharge from the ulcer has been used, or the detritus of the cancerous mass. But are these really the parts inoculable? Is it not rather the cancer-cell at a certain period, whilst yet recent, that should be employed? The success obtained by Langenbeck, leads me to believe that that is the element required. This experimenter took fresh cells from a cancer yet warm, removed from the humerus, and introducnd these cells into the blood vessels of a dog. Cancerous tumors in the lungs were the result.

* To return to the consecutive syphilitic affection, I would remark, that in France, inoculation has succeeded only after the method adopted for that of chancre, that is, with the lancet as used in vaccination. We know that the manner of applying the agent may exercise a great influence upon its effects. I have already shown, that for the inoculation of the brute with chancre, the ordinary proceeding is insufficient, since M. Auzias was obliged to resort to another already described. Aside even from the inoculation of syphilis, substances are found which remain inert after the ordinary method of inoculation, and yet which produce very marked results when applied in another manner. Tartar emetic ointment is one of these; I have tried to inoculate it without success; while by frictions I have succeeded in producing pustules. The mucous tubercle which is so readily communicated by prolonged and repeated coition and by suckling, is not inoculable by a simple puncture of the lancet; but if a blister be previously applied, and if we dress the denuded dermis with charpie steeped in the pus of the pustule, in fine, if we adopt the method of Wallace, as M. Boulay has done, as I have done, then the inoculation will succeed. It is also probable, that a simple puncture of the lancet dipped in syphilitic blood, would not produce positive results. But if, as has been done by Waller (de Prague), we scarify the skin, if with a particular instrument we introduce infected blood into each trifling incision, and if the whole is covered with the same blood, we shall have strong reasons to expect the same success which Waller obtained. Besides the arguments which I have mentioned and opposed, others have been raised less and less scientific, in proportion as my adversaries have lost ground. At first, the cases left

* Smidt, *Jahrbuecher;* t. xxv., quoted in the *Encyclopédie Anatomiq ue*, t. ix. p. 279.

something still to be desired on the score of authenticity; the diagnoses of the inoculated affection had not been made; instead of taking matter from a secondary disease, it had been taken from a chancre; then followed insinuations against the credulity, the dishonesty of the observers, &c. In all desperate causes the same course is adopted. With regard to the experimenters, I will cite the names of Wallace and Waller, who were at the head of an extensive venereal service; MM. Bouley and Richet, who experimented at the Lourcine, and M. Cazenave, the author of a Treatise on the syphilida, whose experiments were made at the hospital *St. Louis*. The names of the pupils in Paris who reported these cases, are MM. Pellagot, Schneph, Lafargue, Piberet, Rossen, Codet, Dubreuil, and Duménil, all of whom are distinguished *internes*. Now I entreat those who are investigating this subject, and who are desirous of coming to some conclusion, to peruse these reports, together with those of the *internes* mentioned, and of my *confreres*, all of which show the transmissibility of syphilis otherwise than by the pus of chancre, (these cases are particularly noticed in the chapters on mucous tubercles, the syphilida, and exostosis;) then let them examine those presented by the opponents of this doctrine, which may be found in the *Treatise* of M. Ricord. Having duly considered the arguments offered by both parties, they may then obtain a satisfactory decision. They will be surprised at two circumstances in the work just quoted, first, the small number of the experiments, their want of connection, and the absence of all details; second, the limited time after the experiments that the patients remained under observation. Constant allusion is made to the *very numerous* negative experiments, as was the case with those relating to the inoculation of animals. Now go to their sources, and see what number they can offer! Of course we refer to authentic sources, to books and writings, not to private conversations. M. Velpeau has exposed the value of the facts brought forward in opposition, in a discourse which must long be regarded as a remarkable specimen of annihilating criticism; they have been reduced to the character of simple assertions, in some instances of no importance whatever. Waller has likewise noticed the brief period during which the subjects inoculated with secondary accidents were watched; and the incubation being occasionally quite prolonged, as in the instances reported by Wallace and the physician of Prague, M. Ricord *may* have regarded as failures some really successful inoculations. In this case, he would not be the first who has unconsciously succeeded. I am certain that this has happened to another experimenter with whom I am acquainted. It may have been observed, that when I alluded to the fact of incubation after the inoculation of secondary accidents, I did not speak in decided terms, for it may be absent, or rather a small pustule may at first be developed, which miscarries, and yet some time afterwards the genuine pustule may appear. In this case, the first pustule seems to be but traumatic, whilst the other is a specific effect. Further, since I started this question of the transmissibility of the secondary accidents, M. Ricord has not seriously examined the subject,

and he has even rejected the facts brought forward without an examination. At this, however, I should not feel wounded, since he has been guilty of the same conduct towards his own pupils and friends. In the discussion on tubercular affections of the testis, M. Malgaigne proclaimed in full tribune, that M. Ricord commenced by rejecting the observations of his brethren, and that he treated in the same manner those of his pupils made under his own eyes. Even those made by himself have shared the same fate, when opposed to his theories.* If M. Ricord thus treats observations relating to tubercular affections of the testis, what would he not do with those which endanger the safety of his system! Examine the discourses and writings of M. Ricord in reply to the arguments and facts adduced not only by myself, but by every orator in the Academy, his answer is always the same; it is always what we call *petitio principii;* for supposing that to be demonstrated which is precisely the point in question, and his opinion upon this point being unchangeable, he responds by the question, that is, by his opinion. The whole, in fine, may thus be briefly expressed; *chancre alone is inoculable.* Now this is the point in dispute, and the contrary we aim by facts to prove. This has long been a favorite method of reasoning with M. Ricord, but with no bad intentions. It is thus noticed in the Thesis of M. Hélot, formerly an *interne* of the *hôpital du Midi:*

"My dear master, like others who are wedded to some favorite doctrine you have established the value of inoculation on the *petitio principii.* For such I write not, but for those who seek the truth, and I believe that I have here furnished them with the elements of conviction, drawn from analogy, observation, and experience." Our author has clearly demonstrated that secondary accidents are transmissible, yet as important medico-legal questions not unfrequently arise in connection with this subject, it may be satisfactory to the young practitioner to know that this doctrine is defended by the following eminent British and American authorities, viz., Sir Astley Cooper, *Lectures on Surgery,* by Tyrrel, Am. ed., p. 497; Mr. Liston, *Elements of Surgery,* by Dr. Gross, p. 205; Mr. Colles, *On Venereal,* p. 263; Mr. Wallace *On Venereal,* p. 335; Mr. Hey, *Med. Chir. Transactions,* vol. 7th, 1830, p. 541; Jesse Foot, *On Venereal,* p. 402; Herbert Mayo, *On Syphilis,* pp. 122, 123; Sir Benjamin Brodie, *Lecture* in *Lond. Lancet,* Feb. 1844, p. 677; Mr. Babington, *Notes to Hunter,* Am. ed., p. 321; Mr. Lawrence, *Lectures on Surgery, Lond. Med. Gazette,* March, 1830, pp. 806, 807; Mr. Porter, *Lectures on Syphilis, Dub. Med. Press,* Feb. 17th, 1847, pp. 99; Mr. Whitehead, *Illustrations of Transmitted Syphilis;* Samuel A. Lane, *Lectures on Syphilis, Lond. Lancet,* May 28th, 1842, p. 294; Mr. Bacot, *On Syphilis,* p. 252; Mr. Carmichael, *Clin. Lectures on Ven. Diseases,* p. 51; Langston Parker, *Modern Treatment of Syphilitic Diseases,* 2d ed., p. 169; Mr. Egan, *On Syphilitic Diseases,* pp. 293, 294; Erasmus Wilson, *On Syphilis,* p. 36; Geo. McLellan, *Principles and Practice of Surgery,* pp. 250, 251; Dr. Neligan, *Dub. Quart. Journal of Medicine,* Feb. 1853, p. 119; Dr. Campbell, *North. Journal of Medicine,* 1844, or *Cormack's Journal,* Sept. 1844, p. 773; Dr. John Rose Cormack, *Lond. and Ed. Monthly Journal of Medical Science,* Sept. 1844, p. 773; Evanson and Maunsell, *On Diseases of Children,* Am. ed., p. 350; Dr. James Stewart, *On Diseases of Children,* 4th ed., p. 468; Dr. John Watson, *United States Med. and Surg. Journal,* vol. 2d, p. 103; Dr. H. D. Bulkley, *On Syphilis in Infants, New-York Journal of Medicine and Surgery,* Oct. 1840. We might add to the list, but surely it is unnecessary. During our recent visit to Dublin, we were personally assured by Messrs. Cusack, Adams, Fleming and Wilmot, that they entertain no doubts of the correctness of the doctrine here advocated, and we know that

* Take the orator's own words. It should be recollected that M. Malgaigne is the friend of M. Ricord, and that it is from the journal of a friend that they are copied. "M. Ricord, possessed of a theatre of observation vast as could be wished, began by rejecting the observations of others; then adopting a certain theory, he disregards those of his pupils made under his own eyes, in his own service, and finally, I must say it, he takes no heed of his own, when they conflict with his own preconceived views." Vid. *l'Union Medicale,* Aug. 30, 1851.

among our own countrymen, this view of the subject is inculcated in the lectures of Profs. Mott, Mussey, and Parker. Indeed, it is not difficult to find, even in the works of the most prominent opponents of this doctrine, viz. Messrs. Ricord and Acton, positive proof in its support. As such, we regard Case XV. (God. Eulalie) in M. Ricord's Treatise, 4th Am. ed., p. 204, and that of the child infected by the cavalry officer, mentioned in his *Letters*, xiii. p. 105. Again, in his *Notes to Hunter*, 2d ed., p. 776, he fully admits the transmissibility of the secondary accidents in the following language: "There exists a great number of incontestable cases of syphilis transmitted from the nursling to the nurse, and *vice versâ*." Further proof may be found in the work of Mr. Acton, 2d Am. ed., p. 420. We refer to the report of the case of the infected fœtus, which contaminated its mother.

Can a husband, who has suffered from syphilis, but who is apparently sound, communicate consecutive accidents to his wife, which accidents, in the latter, shall not be preceded by any form of primary sore? It was the opinion of Mr. Colles (*op. cit.* p. 263), that "a newly-married man, who is himself free from every appearance of syphilis and every other disease, shall yet infect his wife in such a manner, that secondary symptoms shall appear in her a few months after marriage, and these not be preceded by any primary symptoms, or by any discharge whatever from the genitals." Mr. Carmichael (*Clin. Lect.*, p. 50, 51) states that he has met with instances of young married women above suspicion, who were affected with constitutional symptoms, yet who, on the minutest inquiry, he could not learn ever had any primary venereal affection. But their husbands, though equally free from primary, at the time of their marriage, had on them secondary symptoms in the form of eruptions or ulceration of the throat. A case of the latter kind came under our own care a few years since. The individual married in spite of our remonstrances, and about two or three months afterwards, his wife had a similar eruption on her lower extremities. We here insert the details of two very interesting cases, for which we are indebted to Mr. Langston Parker:

"Case I.—A gentleman contracted a superficial primary sore, which healed without leaving a mark or induration behind it. Being apparently in good health, he married. Three or four months after his marriage, he perceived on his body numerous red, smooth, elevated, scaly blotches; very shortly his wife broke out with an eruption of a similar character, and the hair came off rapidly in both patients. In this state, they were sent to me. *Neither had any primary disease*, and the lady had never had the slightest irritation in the genito-urinary organs. I examined them both frequently and carefully, and I am positive the wife had never suffered from sore, excoriation or discharge.

"Case II.—A gentleman, who had suffered both from primary and secondary syphilis, married, after having been free from all symptoms for twelve months; soon after this he had another eruption and sore throat; his wife became affected with the same eruption, excavated ulcers of the tonsils, and was prematurely delivered of a dead child, in the sixth month of her pregnancy. Both patients lost their hair and eyebrows. On account of the obstinacy of some of the symptoms, in both cases, they were sent to me from a distance to be treated by the moist vapour of mercury, under the use of which they both perfectly recovered. In this case the lady was more than once carefully examined; she was free from all evidence of primary disease, and never had suffered from the least irritation in the parts."

Mr. Porter remarks (*Lect. cit.*, p. 100), that the cases which have come under his observation, have led him to the conclusion, "that the semen of a diseased man deposited in the vagina of a healthy woman will, *by being absorbed*, contaminate that woman, without the necessary occurrence of a chancre, or any other sore secreting matter on either the man or the woman." Prof. Willard Parker has furnished us with the particulars of three cases in support of this doctrine, and others of a similar nature may be found in the paper of Dr. John Watson, to which we have referred.

Now, if the doctrine here broached be true, and if it also be true, as is maintained by Messrs. Ricord, Cazenave, and Erasmus Wilson, that the syphilitic temperament or diathesis, when once formed, may last ten, fifteen, and twenty years, or, indeed, never be eradicated, when can a man with safety marry, who has had constitutional syphilis, but who is free from every external manifestation of the disease? Will it do to give him "a clean bill of health," after a "six months' quarantine," as proposed by Mr. Acton (*op. cit.*, p. 416), or after that which has lasted from "two to five years," as advised by Mr. Wilson (*op. cit.*, p. 49)?—G. C. B.

A TREATISE ON VENEREAL DISEASES.

PART I.

PRIMITIVE VENEREAL DISEASE.

In the announcement of the classification which I have adopted, I have already explained what I understand by the terms primitive venereal disease. It may arise simply from irritation, or, from a specific cause, hence may follow affections non-specific; or specific, virulent. Thus, the lesions discussed in our first division may be regarded as simple local inflammations; certain instances of blennorrhagia are of this class. But, as the syphilitic virus is the most common cause, these affections are, generally, neither simple nor local; if, for example, chancre should possess this character, it would no longer be a chancre, that is, a specific ulceration, but simply a suppurating wound.

After the accidents, which, by all, are regarded as primitive, will be found discussed in this division those which by others are called consecutive, hence the despair of the nosologists, who pretend to be strictly logical, and of the syphilographers, who profess to be governed by absolute laws; among these diseases are the mucous tubercles. I have assigned them a place between the *primitive* and *consecutive* accidents, to show that when caused by a specific virus the disease is the same, and that the facts which relate to it belong to both. A more arbitrary course might separate them; but it should be understood that the arrangement here adopted is but provisory and artificial, to assist the comprehension of junior minds.

Most of the diseases of this first division are of an acute nature, and assume a more or less inflammatory form. Besides the symptoms which may be attributed to the virus, others more direct, more immediate, of an inflammatory character, manifest themselves. Indeed, if the testicles, the prostate gland, the articulations, the eyes, the lymphatic ganglia, become involved through sympathy or metastasis, it is under the form of a phlegmasia. The practitioner is therefore most frequently required to treat an inflammation; and to subdue that which threatens he should promptly direct all of his attention, all his means, without reference to its specific cause. First of all, the effects must be combated. Antiphlogistics must then occupy a prominent place in this division. They seem,

indeed, ultimately to decide everything. The advocates of the doctrine of the non-existence of a specific virus have seized upon this circumstance, and taking the exception for the rule, the temporary for the permanent, have proclaimed the constant success of simple treatment, such as antiphlogistics, emollients, hygiene, and that, consequently, venereal affections do not depend upon a specific virus. It is true that simple treatment is sometimes sufficient, since nature alone is occasionally adequate to the purpose, especially in those cases which are not virulent; the error lies in the generalizations from these results, and particularly in the conclusions drawn of the nature of the disease from the means by which it has been cured; they cannot be specific, because they have been cured by a non-specific treatment! The whole science of medicine properly interpreted, protests against this error, which would deny the *vix medicatrix naturæ*, the greatest and most brilliant fact in pathological physiology.

CHAPTER I.

BLENNORRHAGIA.

From the time of Swediaur, the term *blennorrhagia* has been applied to the inflammation of certain mucous membranes, which generally follows impure connection, and the characteristic of which consists in a more or less abundant secretion of mucus mixed with pus, (*muco-pus.*) This disease has also been called *gonorrhœa*, which denotes a discharge of semen, and it has been known likewise under the name of *chaudepisse*, derived from the burning sensation which the patient suffers in urinating. These terms, like others which I purposely omit, express only a symptom of the disease that may be wanting, in which case they would mean nothing; thus the seminal flux is an hypothesis; the burning sensation may be entirely absent. The word *blennorrhagia* itself is far from being without reproach, for the discharge is not always of the same nature; for example, in the commencement it may be mucus, then it may be mucus mixed with pus; finally, it may consist of pus alone. Still worse would it be if there were actually a *dry* blennorrhagia.

Seat.—The ordinary seat of blennorrhagia in the male is the urethra, sometimes it affects the mucous lining of the prepuce and the glans penis; in the female, it occupies the vulva, vagina, urethra, and the uterus; in both sexes, the oculo-palpebral mucous lining, that of the anus, and lower part of the rectum. The buccal blennorrhagia is excessively rare, and it is probable that that of the nose is but an imaginary disease. In certain regions, when the skin suffers a kind of mucous transformation, blennorrhagic discharges may be observed, as, for example, in the genito-crural fold, at the internal face of the thighs, and the umbilical region. Several of the parts mentioned may be simultaneously affected with blennorrhagia: in the male, blennorrhagia of the glans, of the prepuce, and of the urethra, may simultaneously exist; in the

female, the entire vulva, the vagina, urethra, the neck and body of the uterus, may at the same time be affected.

Causes.—Blennorrhagia is most frequently observed at that period of life during which the functions of the genital organs are most exercised, viz. adult age. It has, however, been noticed at a very early age, particularly in little girls of a lymphatic temperament, which temperament is also favorable to its development in the adult.

Women are more frequently affected than men, and communicate the disease with greater facility.

All climates have been observed to be favorable to its development. Among the causes of the disease have been ranked certain aliments and exciting drinks; for example, salted food, spices, asparagus, truffles, strong liquors, coffee, beer, may really promote the action of the direct cause. The excessive use of beer alone has been accused of producing a blennorrhagia. Is there any foundation for this belief? I am well convinced that this beverage will exasperate, and even rekindle an urethritis of long standing which has scarcely disappeared, but more than this I have not observed. Further, beer exerts but little influence on other than urethral blennorrhagias.

Gout, rheumatism, dartrous, and scrofulous vices have been noted among the causes of blennorrhagia. It is certain that the existence of a rheumatic, or of a dartrous affection in a patient, may modify the progress of the disease: thus, we see rheumatic patients affected with blennorrhagia, in whom, during a rheumatic paroxysm, the discharge ceases, and yet upon the subsidence of the former, the latter reappears; on the other hand, there are patients who notice the appearance of a discharge at each access of their rheumatic attack. Patients afflicted with dartrous affections have been observed, whose discharges, like the cutaneous disease, assume a chronic character; in such cases it becomes of a serous nature, and small in quantity; the secreting surface is affected with a troublesome itching, and the urethral affection is cured by remedies addressed only to the cutaneous disease. Scrofula renders a blennorrhagia chronic, and the discharge in these cases readily assumes a gleety character. This is all that can be said of the part which the above morbid conditions play in producing or modifying the characters of a blennorrhagia; beyond this all is hypothesis.*

* Mr. Henry James Johnson, *On the Genito-Urinary Organs*, part i. p. 37, after alluding to the influence of gout or scrofula in *predisposing* to blennorrhagia, observes: "but, I am mistaken if those peculiar states of system do not, occasionally, produce the complaint without the interposition of any obvious exciting cause." He then gives the details of two cases which support the above view of the subject. As to the influence of *gout* in producing a blennorrhagic discharge, we have no doubts whatever. About four years since we treated a patient some seventy years of age, who was the victim of gout, and during one of his attacks he was seized with a most copious urethral discharge. We know, *positively*, that this discharge depended upon no other cause than the *gout*. Dr. John Watson, of this city, informs me that two cases of the kind have come under his observation.

Numerous and serious medico-legal questions may arise in connection with the subject of urethral and vaginal discharges, both in children and the adult. The reader may find, both in the works of Beck and Taylor, on Medical Jurisprudence,

The direct causes are either physical, chemical, or pathological: thus, a calculus passing through the urethra, the introduction of a sound, an ammoniacal injection (Swediaur), all of these agents may give rise to a muco-purulent secretion. Coïtus too often repeated, or performed with organs of disproportionate size, masturbation, menstrual blood, the ichorous discharge from a cancer, the lochia, and especially the *fluor albus*, are so many causes which have been accused of producing blennorrhagia, and which, of course, are particularly furnished by the female.

Virulent pus, that which is the medium of the syphilitic virus, is, in my opinion, the most frequent and powerful cause of blennorrhagia. Those who deny that specific pus can give rise to a virulent blennorrhagia, have nevertheless supposed that it may act upon the mucous membranes like any simple irritant; those who are unwilling to admit the power of the virus to produce a primitive syphilitic blennorrhagia, have acknowledged that it may give rise to the same disease, but of the consecutive form. Syphilitic virus is therefore entitled to a prominent place in the etiology of blennorrhagia, a fact which should be borne in mind when we come to the treatment of the disease.

A general view of the causes mentioned shows that they act directly upon the mucous surfaces, or indirectly after they have passed through the system. Thus, the syphilitic virus should have this double action, and the rheumatic diathesis can act but indirectly. It is evident that blennorrhagia, from an indirect cause, cannot be of a simple nature, and that among the cases which proceed from a direct cause, there are few whose action is limited to the production of an inflammation. Such is the fact only where the disease has been caused by foreign bodies, excessive indulgence in coïtus, masturbation, menstrual secretion, and the *fluor albus* which has accidentally become a little acrid.

Whatever may be the nature of the blennorrhagia, certain peculiarities of the discharge, of its organic vital conditions, affect its contagious properties. Thus, the predominance of pus in the secretion is favorable to contagion; in proportion as mucus predominates, that is, as the disease is less acute, the less are the chances of contagion. But there can be no doubt that very trifling discharges, *drops*,

several interesting and instructive cases recorded, from which he may learn the great difficulty which occasionally attends the diagnosis between the virulent and non-virulent discharges. We can only refer to some of the principal sources of information upon these questions. Rayer, *On Diseases of the Skin, Translated* by Dr. Willis, London, 1835, p. 765. Also *Memoir* by the same author, "*sur les inflam. non-virul, memb. muq. des org. de la generat. des Enfans,*" Paris, 1821. Capuron, *Med. Leg. des Accouchemens*, p. 41. Mr. Kesteven, *Lond. Med. Gaz.*, vol. xlvii. p. 372. *British Amer. Journal*, May 1848, p. 19. Dr. John Rose Cormack; *Observations on Gonorrhœa and Syphilis, with reference to Forensic Medicine, &c., in Lond. and Edinburgh Monthly Journal*, Sept. 1844, p. 753. Sir Astley Cooper, *Lectures on Surgery.* Benjamin Bell, *On Venereal*, vol. i. p. 416. Dr. Underwood, *Diseases of Children.* Mr. Moses, *Lond. Lancet*, Dec. 1835, p. 443. Frederick C. Skey, *Lectures on Venereal Disease, Lond. Med. Gazette*, vol. xxiv. pp. 439, 440. Wm. Lawrence, *On a Peculiar Affection of the Genitals in Female Children, Lond. Med. Gazette*, Aug. 21, 1830, p. 828. Mr. Egan, *On Syphilitic Diseases*, p. 130. G. C. B.

which are regarded as of no consequence, may communicate very severe and sometimes very virulent attacks.

There are individuals so constituted that they may with impunity expose themselves to the risk of contagion. There exists between the parts brought into contact during coïtus a certain sympathy of action, an adaptation of form and volume which singularly favors or prevents the development of blennorrhagia: thus, a man shall live for many years with a woman who has a discharge from the vagina, and yet shall himself escape; habit has created a kind of harmony in the vitality, the form, and the volume of the organs which produces this immunity; but let the habits of the woman become changed, let her have a new lover, and the latter shall perhaps contract a blennorrhagia at every menstrual period. Facts of this nature have been observed by every practitioner who is consulted by patients affected with venereal disease. Fallopius, a writer of the XVIth century, remarked that certain infected women communicated nothing to their husbands with whom they had no sexual pleasure, but gave disease to their lovers who gratified their desires.

Certain conditions of vitality may then promote contagion, and it is an established fact that blennorrhagia is almost always communicated by coïtus. But blennorrhagic pus, which is simply deposited upon a mucous surface, may produce the same effect; the experiments of the students mentioned by Benjamin Bell prove this fact. It has been asserted that pus which has been swallowed and absorbed in the stomach, so directs itself to the genital organs as to determine a blennorrhagia. The proof of this is still wanting.

Nature.—In discussing the question of the nature of the syphilitic virus, I have anticipated the difficulties which would arise when we come to study the etiology of blennorrhagic discharges. I have stated that Hunter believed that these discharges recognized the same cause as chancre, and that this cause was the syphilitic virus, the effects of which differ according to the surfaces to which it is applied. But, as the vagina, according to Hunter, is a secreting surface, and as upon the mucous lining of this canal true chancres have been observed, the theory of the English surgeon is thus strongly compromised.

I have noticed the opinion of Benjamin Bell, who admits two morbid elements, the one blennorrhagic, the other chancrous. Finally, I have mentioned the opinion which views blennorhagia as dependent upon an inflammation caused simply by an irritation, the effects of which are local, and never resemble those produced by a morbid poison. When the latter effects have been observed, then it was owing to the carelessness of the observer, or indeed he was ignorant of the proper method of investigation, or he knew not how to manage; he could not have discovered a chancre hidden under a narrow prepuce, in a fold of the vagina, or upon the neck of the uterus, or in the canal of the urethra. The observer could not, or knew not how to detect anything but the discharge, and taking this symptom for the disease itself, he has placed on his list, under the head of diagnosis, *blennorrhagia*, when it should have

been *chancre.* It must at once be admitted that errors of this kind have been largely committed, especially at a time when the hint had not been given, and before they possessed the means of investigation which we now enjoy. But Hernandez had already *inaugurated* the *chancre larvé;* Hunter dwelt at length upon those cases in which a chancre may escape detection, and our contemporaries, at the head of whom must be placed M. Ricord, for twenty years have spoken of these errors and their causes, and have taught the method of avoiding them. The speculum, in fine, has rendered the argument drawn from the imperfection in observation, much less forcible than it was before. With regard to ignorance and want of skill, these are daily disappearing, and there are practitioners who from their position and reputation as honest and sagacious observers, put to naught this argument as well as another too often employed in desperate cases. These practitioners believe that there really exist syphilitic discharges which have no connection with chancre, which has always been absent at every period of the blennorrhagia; further still, the syphilitic nature of these discharges has been shown by the appearance of secondary accidents, by the general manifestations of poisoning. No objection can be seriously urged against similar facts observed in the female where the urethra remains sound, without any discharge; for the vulva, vagina, the neck of the uterus, the anus may here be directly explored, but when it concerns a urethral blennorrhagia in the male, the chancre *larvé* renews all its claims. This has been supposed even when the pus from the urethra could not be inoculated. Thus then, in order to combat a pretended supposition, that is to say, the non-existence of chancre in virulent blennorrhagia, a supposition has been employed, an established principle has been violated, a chancre in the urethra has been supposed when syphilitic accidents have supervened, and all this because it is pretended, that chancre alone can produce these accidents. Now this is the point in question. I myself, do not admit the existence of chancre beyond the navicular fossa. I am aware of what has been written concerning the deep-seated urethral chancre; some pathological specimens even of which have appeared satisfactory to those who exhibited them. But I must confess, after a very careful examination of that regarded the most important in proving the existence of a profound urethral chancre, I am convinced that it was a case not of syphilitic, but of tubercular ulceration, which existed at the same time in the form of cavities in the prostate gland, in the testicle and in other organs of the same patient. I observe that some excellent surgeons partake of this same doubt.* M.

* In his Communication to the Academy of Medicine, Oct. 12, 1852, (*De la Syphilization,* &c., p. 367,) M. Velpeau thus remarks: "The specimens presented by M. Ricord as examples of chancre, are far from being incontestable. In one of them, I recognize that of a tubercular young man, having large cavities in the prostatic portion of the urethra, and I see no indication that chancre had existed there; the other is that of an old man, almost equally obscure. I saw these specimens when first exhibited to the Academy, but they were far from satisfying me of the existence of chancre." The report of these cases in the *Treatise* of M. Ricord (4th Am. ed. pp. 126, 127), is exceedingly meagre and unsatisfactory; compared

Baumés cannot understand how the pus of a chancre can traverse the great extent of the urethra without leaving any trace on its passage; in fine, without producing ulceration but at one point of this canal. M. Chomel remarks, with his accustomed moderation: "It is only an exceptional case where the presence of a chancre in the urethra has been demonstrated *or rather presumed.*"*

But admit, for a moment, the existence of chancre deep in the urethra, provided that it is rare, and exceptional, and that we have the candor to acknowledge. Now compare the frequency of urethral chancres with the number of consecutive syphilitic accidents which have been seen to follow urethral discharges, and the enormous number of the latter compared with the former cases, will at once be apparent. Physicians who devote special attention to the diseases of the skin, as, for example, MM. Cazenave, Martins, Legendre, will tell you that blennorrhagia produces as many cutaneous affections as chancre. Now, deduct some cases of blennorrhagia which you may carry to the column of urethral chancres (if you admit their existence), there will remain a considerable number of eruptions which can be attributed only to blennorrhagia. This truth has been proclaimed before the whole Academy of Medicine, particularly by men who have long been observers, and who have been committed to no particular theory in syphilography, such as MM. Moreau, J. Cloquet, Velpeau, P. Dubois, &c.

Now, admit still further, that every specific syphilitic discharge is but a symptom of chancre. There will still, however, always remain a form of inflammation of the mucous membranes, a seropurulent discharge,—in fine, a blennorrhagia, which by its progress, its duration, its accidents, its complications, can never be referred to an inflammation like that produced by simple irritants, by foreign substances, by ammoniacal injections, or that which Swediaur produced upon himself. These simple inflammations are not communicated with the same characters, from one individual to another; they are not followed by the accidents of metastasis, such as blennorrhagic ophthalmia, or blennorrhagic arthritis; they do not continue a year as did the blennorrhagia which that student gave himself, by applying between the prepuce and the glans, pledgets dipped in gonorrheal matter.† All these effects,

with that in his Notes to Hunter (pp. 799, 803), it will be found to differ in several particulars, and in our humble opinion, the chapter (p. 147) on ulceration of the bladder in the excellent Treatise on the *Urinary Organs* by our countryman, Prof. Gross, or that on Scrofulous Prostate in the work of Mr. John Adams on the *Anatomy and Diseases of the Prostate gland*, pp. 117, 125, afford a far more correct solution of the true nature of these cases. The ulceration in these cases was of very great extent, involving the urethra, bladder and prostate; yet when we find M. Ricord, in 1851, (*Letters*, viii. pp. 59, 60,) inculcating the doctrine, that the urethral chancre is *never* very extensive, and that when we find an abundant discharge (as existed in these cases), we may conclude that it is something more than the products of a chancre, we are astonished that he does not even allude to these very remarkable exceptions. At any rate, the fact that his diagnosis in these cases is questioned by such men as MM. Velpeau, Vidal, and Prof. Gross, (as we learn from a recent letter from the latter gentleman,) is sufficient to render them far from being, as is asserted by M. Ricord, "incontestable."—G. C. B.

* *Abeille Medicale*, Jan. 1851. Lecon *clinique* de M. Chomel.

† B. Bell, on *Venereal*, t. ii. p. 492.

which are not denied by my opponents, proceed from a single cause, which does not simply irritate the mucous membrane, but which penetrates the system. Now this cause we may call a vice, or virus; we may say, that it is not syphilitic, that it is gonorrheal. We come then to the conclusion of Benjamin Bell, and admit a double virus, or more properly speaking, we apply two names to the same virus, which really requires much less expense of the imagination, much less research, much less time, since it is already made.* M. Baumés also admits a double virus, that of chancre, and that of blennorrhagia; the action of the latter, in his opinion, is not confined to that of irritation, it is absorbed, and then it does terminate in the production of primitive accidents, such as bubo, ophthalmia, arthritis, but it gives rise to such symptoms as are described in the following remarkable passage: "I can affirm," said Mr. Baumés, "that during the past three years alone, I have seen at the *hospice de l'Antiquaille*, exclusive of my practice in the city, five cases of *simple* blennorrhagia, where I am certain that there was no chancre in the urethra, which cases were followed after some time, by constitutional symptoms, such as *well-marked rounded ulcers on the tonsils; mucous tubercles at the commissures of the lips, about the anus, and on the scrotum; syphilitic ecthyma; furfuraceous, squamous, and papular eruptions,* &c., &c. In two of these cases, on the seventh or eighth day from the commencement of the blennorrhagia, I inoculated with muco-pus, by three punctures on each thigh, without any result."† M. Baumés then admits, that

* For further proof of the existence of a blennorrhagic virus, which virus produces ulceration, buboes, arthritis, ophthalmia, sore throat and papular eruptions —the reader may consult Mr. Carmichael (*Clin. Lectures,* pp. 2041); Mr. South (*Ed. of Chelius,* vol. i. Am. ed. p. 188); Erasmus Wilson (*on Syphilis,* p. 53); Mr. Bacot (*Treatise,* p. 126;) Langston Parker (*Mod. Treat. of Syph. Diseases,* pp. 32, 43); Mr. Egan (*on Syph. Diseases,* pp. 17, 18, 21, 59, 60); Mr. Wallace (*on Venereal,* p. 264); Henry I. Johnson (*on Gonorrhœa,* &c., p. 23); M. Ricord (*Notes to Hunter,* pp. 59, 60; also *Treatise,* Am. ed. pp. 70, 284), in both of which he insists upon the frequent connection between blennorrhagia and ulceration. Even Mr. Acton, (2d Am. ed. of *Treatise,* p. 222,) states that "we are compelled to admit that in gonorrhea the system is so modified as to become affected by rheumatism;" again, at page 36, he says, that we should not be deterred from attempting to cure gonorrhea rapidly by the fear of driving the disease into the system, for, "it will rush in fast enough." And yet, in view of the above fact, Messrs. Ricord, Acton and Bransby Cooper persist in proclaiming that blennorrhagia is a non-virulent, non-specific disease! But, asks the former, (*Lett.* v. p. 37), is it not true that in the immense majority of cases, blennorrhagia is not followed by syphilitic infection? Very true, and in this respect, it resembles the superficial primary chancre. "There are chancres," says the same high authority, "and *perhaps these constitute the greater number,* which do not infect the system." (*Lett.* xxviii. p. 207). The testimony of Mr. Acton is to the same effect; at p. 264 of his *Treatise,* (Am. ed.) he observes, "that in simple, uncomplicated chancres, secondary symptoms occur in such feeble proportions that they should not enter into our calculations." Again, blennorrhagic matter, applied to the lining membrane of the eye-lid, contrary to the assertion of M. Ricord (*Treatise,* Am. ed. p. 67), does sometimes produce chancres (ulceration) of the palpebral lining, which is followed by peri-auricular buboes. For proof, as furnished by Dr. Mairion of the Military Hospital at Louvain, Mr. Wilde and Dr. Egan of Dublin, see the *Treatise* of the latter gentleman, pp. 114, 115. These facts viewed in connection with those which we shall presently adduce in favor of its inoculability, and its mode of propagation, we believe sufficient to entitle blennorrhagia to be regarded as a specific disease, independent of the existence of chancre *larvé.*—G. C. B.

† T. i. p. 233.

urethral discharges may be produced: 1. By a chancre; 2. By a virus, which is not chancrous, but which gives rise to the accidents already mentioned; 3. By an irritation or inflammation which produces but sympathetic effects. M. Ricord is of the opinion that M. Baumés has arrived at these conclusions from conciliatory motives. For my own part, I believe that M. Baumés has, by a long and directly opposite method to M. Ricord, formed the opinion, that there are urethral discharges without any chancre, which are virulent, and capable of giving rise to consecutive syphilitic accidents; only, these accidents may be less frequent, less profound. But there are chancres which frequenly do not produce consecutive accidents, and the latter are not always profound. Experiment, besides, here steps in with unanswerable arguments; for Hunter proved that the pus of chancre and that of blennorrhagia might produce both chancre and blennorrhagia.* When I reach

* Mr. Carmichael claims Cases xiv. p. 108; ix. p. 104; xx. p. 113, and xv. p. 109; in the *Treatise on Inoculation* (4th Am. ed.) by M. Ricord, as proof that the matter of blennorrhagia like chancre is inoculable. To the above, we would add Case lxi. p. 185. In this case the matter was taken from a bubo following blennorrhagia, and the pustules produced are called *false* pustules. If with the report of this case, the reader will peruse M. Ricord's account of the characteristic pustule, (*Lett.* xviii. p. 142), and that of the *false* pustule at page 146 of the same *Letter*, we think that he will hesitate before he accepts the pointed pustules with slight induration, produced by this inoculation, for pseudo-pustules. The latter, we are distinctly told, (*Lett. cit.*) *never* lasts longer than from five to six days, yet the pustules in this case lasted *thirteen* days. That they healed without treatment is surely no evidence that they were not syphilitic, for this is a test on which, we believe, neither M. Ricord nor any modern authority relies. In his *Treatise*, (p. 255,) he states that "the primary specific ulcer may often heal without treatment," and Mr. Acton (*op. cit.* p. 255) assures us "that some syphilitic sores heal in twenty hours." Indeed, this spontaneous healing of chancre was known even to Abernethy, (pp. 48, 9.) In the report of the above case, it is mentioned that the pustules did not assume the appearance of specific ulcers. Now, what is the appearance of a specific ulcer. In another part of this work, we have already shown that an absolute diagnosis cannot be formed from the physical characters of an ulcer, a fact admitted even by M. Ricord himself. Though in his *Letters*, (xviii. p 138,) he informs us, that in true inoculation, the dermis is completely bored, as if with a punch, in the same *Letter*, (p. 141,) he states, that the primary ulcer does not always destroy the entire thickness of the skin or mucous membrane. Indeed, this distinguished syphilographer has at length been compelled to admit that, after all, there is no *characteristic* pustule. In his inoculations on M. Laval—that martyr to *syphilization*—M. Ricord insisted that the little ecthymatous pustules which he produced, and which speedily disappeared without ulceration or suppuration, were genuine chancres, *only*, of a particular *form* (*seulement avec une forme particulière*). For proof of this assertion, see the Communication of M. Depaul to the Academy of Medicine, July 27, 1852, (*De la Syphilization*, &c. p. 54,) and that of M. Ricord himself, (*op. cit.* p. 67.) But, is it reasonable to suppose that a virus, which, when applied as in the ordinary modes of propagation, produces effects so diversified, should on artificial inoculation produce the same invariable results? The numerous experiments of Mr. Egan, of Dublin, and M. Sperino, of Turin, if further proof be wanting, conclusively settle this question. Mr. Egan (*op. cit.* p. 27) observes: "in some of the cases to which I allude, the only effect produced (*on inoculation*), was slight inflammation, which in the course of a few days subsided; in others, the inflammation ran to a higher pitch, and terminated in an unhealthy phlegmonous abscess; while, in a third, no visible effect was at all discernible. These remarks apply more particularly to the first class of primary ulcer" (the superficial). It will be remembered that the matter used in these experiments, was taken from ulcers which were followed by constitutional infection. On this subject, the reader may also consult the *Treatise* by M. Sperino, "*on Syphilization*," p. 94. At p. 501, he informs us that the pus of the so-called *false* pustules has been proved by his experiments to be improbable. There is at present (August 9, 1853), in the New York Hospital, a

the subject of balanitis, I will prove that the pus secreted by the glans and the prepuce, which is not ulcerated nor even excoriated, may produce chancres. Now, in this case, even the pretext of the chancre *larvé* cannot be invoked, for it is one of *external* blennorrhagia; the whole surface furnishing the humor may be directly explored. Thus the existence of virulent blennorrhagia is proved by the writings of those opposed to the doctrine, and this from the simple circumstance, that it is a fact.

Incubation.—Incubation, like that of chancre, has here been admitted and denied. The period of incubation is generally exaggerated by patients: thus, it is not uncommon to hear them speak of eight, and fifteen days elapsing between the suspected coïtus and the first appearance of their blennorrhagia; they have even gone as high as fifty days. The majority of patients, having suffered nothing at first, and the discharge being but trifling and colorless, they mistake the starting point of their disease. We should, therefore, in general, mistrust the computation of most patients. But there are those who begin immediately after their suspected coïtus, to watch the most trifling phenomena which appears on the genital organs; and among these observers are found not only men of the world capable of noting these phenomena, but even experienced physicians. Now, these persons have noticed a real incubation; that is, twenty-four hours and three days have passed without anything being discovered, absolutely nothing; after this interval, a sensation of pricking, of itching, followed by a more copious secretion of mucous, which afterwards becomes troublesome, indicates that they have contracted the disease. This has been observed not only in urethral blennorrhagias, but also in those of the prepuce and glans, which are directly open to our observation. It must be admitted, however, that certain cases of blennorrhagia, especially those which follow sexual intemperance, are said to create, even on the first day, a modification in the sensibility of the parts; and that on the second, the discharge appears. Most generally the truly inflammatory phenomena are not estab-

patient, named Hugo Kiel. He is 18 years of age. On the 6th of June, eight days after exposure, he first felt a burning sensation at the meatus. This was followed in a day or two by a discharge, which soon became profuse. He is positive that he has never suffered pain except when urinating. A bubo appeared on the right side two days after the commencement of the discharge. In the course of a week, this was opened, and the matter successfully inoculated three weeks from the first attack. At present, we can detect no roughness within the urethra, though we have examined most carefully with a bougie, nor can we detect any induration along the track of the canal. The patient assures us that he has never been able to detect the slightest hardness, or any unnatural feeling. Is this a chancre *larvé?* As such it is regarded by the talented surgeon (Dr. Van Buren) who performed the inoculation, and who has charge of the patient. The only proof, however, of the existence of a concealed chancre in this case, is the fact, that inoculation produced positive results. Believing with M. Ricord, that chancre alone is inoculable, the successful inoculation is to him proof positive of the existence of a chancre *larvé*. The fact being now incontestably established, that secondary accidents, and blennorrhagia, may produce positive results on inoculation, (for further proof of the latter, see Thesis of M. Bartholé, 1845,) with all due respect to the opinion of the above-named surgeon, in the instance of Hugh Kiel, we can, after the most diligent search, discover nothing more than an ordinary case of blennorrhagia.—G. C. B.

lished until the fifth day, at which period pus predominates over the mucus.

Symptoms.—I have already stated that in the commencement there is a modification of sensibility, which is most frequently increased as are the functions of the organ, especially its normal secretion. In the second stage, there is real pain and dryness of the mucous membrane, which is but of short duration, and soon gives place to a morbid secretion. This secretion is a mixture of pus and mucus, muco-pus. At first of a white color, it assumes a yellow shade, and after awhile a deeper color. As the discharge becomes more abundant, the muco-pus is turned to a greenish color. This is owing to the presence of some blood-globules which by their increased numbers give to the discharge a reddish aspect. These shades are particularly observed in cases where the discharge is of a sanious sero-sanguineous character. But in general the color depends upon the mixture of pus with the mucus. In the acute stage of the disease the matter discharged has an odor which generally resembles that of decayed codfish; sometimes, even in the urethral discharges of the male, it has a faint sickish smell like that of leucorrhœa. It is very true that the odor may be rendered remarkably strong by a neglect of cleanliness. But this alone does not give rise to it, nor decide its character. Thus, when we find a subject with a large number of mucous pustules on the genital organs, we perceive an infectious odor, which, however, is not the same as that exhaled by a patient affected with blennorrhagia, even when both subjects are guilty of the same want of cleanliness. I do not agree with those who so much despise the odor in trying to distinguish the different kinds of blennorrhagia. I have observed urethral discharges in the male of a sour and nauseous smell like that of the *fluor albus* of the woman with whom he had had connection.

Progress.—Sometimes at the commencement of an attack of blennorrhagia, we find general disturbance of the system, such as chills and febrile reaction. It often begins without any premonitory symptoms, and proceeds to a chronic state, or what is less frequent, to a rapid and perfect cure. This termination is often observed in those forms of the disease which are, so to speak, external, like that of the prepuce and the vulva. But, when the disease is more deeply seated, when irritating humors are brought into contact with the inflamed surfaces, as happens to the urethra so often traversed by the urine, then there is less hope for a speedy termination. Sometimes, especially in those who have been often affected, it puts on a chronic form from the beginning, and then the tenacity of the discharge is in direct proportion to the number of attacks which the patient has suffered.

The decline of a blennorrhagia is particularly marked by the predominance of mucus over the pus, by the separation of these two elements of the blennorrhagic discharge. Some globules of pus, so to speak, are found wandering in the mucus, or the stain upon the linen is of a grayish color with a point at the centre of a deeper tinge: finally the linen is no longer marked. The duration

of blennorrhagia, where it is somewhat severe, varies from four to six weeks, from six months to a year. There are few exceptional cases where the discharge is permanent, but in such cases there is reason to suspect the existence of a stricture, an absence of hygiene, an imprudence in the diet, which incessantly renews or rekindles the discharge. M. Cazenave believes that when these relapses occur, it is owing to the existence in the first place of a virulent blennorrhagia, which has left the urethra susceptible to the least irritation, and there it is that non-specific causes produce discharges with the greatest facility.

Diagnosis.—The diagnosis of blennorrhagia brings us to the consideration of the chancre *larvé.* In the female, by the proper application of the speculum, we may discover ulcerations on the neck of the uterus, the walls of the vagina, or learn whether the disease be simply one of blennorrhagic inflammation. In the male, the difficulties are great in the way of diagnosing a chancre deep in the urethra.* Some syphilographers who admit the existence of this chancre, are satisfied when with a catheter they detect a roughness at the seat of ulceration; but a thickening, or a fold of the mucous membrane may give rise to the same sensation. Then comes inoculation: now nothing can be more unfaithful than this latter means, since those who admit the urethral chancre maintain that it is inoculable only at a certain stage of the disease, and because the matter withdrawn by the lancet may be furnished by the portion of the canal which is in front of the chancre, where the inflammation is supposed to be of a simple character. In this manner may be explained the fact, that M. Bigot, in the service of M. Puche, inoculated with urethral pus sixty-eight times without success. These difficulties besides have been admitted by those with whom urethral chancre plays so important a part in the production of virulent discharges. As I do not believe in the deep-seated chancre, and admit only that of the meatus and the fossa navicularis, my mind is less prepossessed with the difficulties of diagnosis.

It is difficult to distinguish simple blennorrhagia, that which is but a catarrhal inflammation from virulent blennorrhagia. However, if we can establish a true incubation, if the discharge has a tendency to become chronic, we have reason to suspect a specific discharge; if, on the contrary, it has followed excessive sexual indulgence, if its progress be rapid and the interval brief between the coïtus and the attack, if the termination be sudden and rapid,

* The best speculum for the male urethra with which we are acquainted, is that devised by Mr. Avery of the Charing Cross Hospital, London. It consists of a conical metallic tube, into the outer funnel-shaped extremity of which the light is thrown from a reflector fastened to the forehead of the surgeon, through which is an orifice sufficiently large to admit the light to reach the eye of the examiner. Through the politeness of this skilful surgeon, we have had opportunities of exploring the seat of strictures, and could not but admire the distinctness with which the interior of the urethral canal was brought into view. Still, as we have already shown on the authority of M. Ricord, the physical characters, even of the *external* primary ulcer are so diversified, that from them alone we cannot pronounce upon its nature, and though we may succeed in exposing an urethral ulceration our diagnosis is not yet *fully* established.—G. C. B.

we have strong grounds for deciding in favor of a simple blennorrhagia. At a later period, if accidents supervene, the diagnosis is then completely established.

Prognosis.—The prognosis depends upon the seat of the blennorrhagia, the age of the patient, the temperament, the intensity, and the duration of the disease. In urethral blennorrhagias we have to dread the occurrence of strictures, affections of the bladder, of the kidneys, and in the male, the prostate gland. In advanced age the latter accidents are most frequent: at an earlier period of life orchitis is oftener observed. The more protracted the disease, the more have we to fear the production of strictures. Previous attacks are favorable to new contagions, and renders the treatment less successful; but the patient suffers less in proportion to the frequency with which he has been affected. The nature of blennorrhagia modifies the prognosis: there is a vast difference between the gravity of that which is simply inflammatory, and that which is virulent.

Pathological Anatomy.—The lesions of tissue observed in cases of blennorrhagia must vary according to the seat of the disease; these will be particularly examined when we treat of urethral blennorrhagia in the male. I may observe, in a general manner, that the mucous membranes have been found of a deep red color, and thickened by plastic infiltrations of the subjacent cellular tissue, and by abscesses. Ulcerations have been observed, even simple ulcerations, the reparation of which by inodular tissue may give rise to stricture, if a canal be the seat of the disease. The same result may be produced by the reparation of the loss of substance caused by the passage of the pus through the urethra which was formed around this canal.

Accidents.—These depend upon the seat of the disease; they will be made known when we come to treat of particular forms of blennorrhagia, especially that of the male urethra, described in the next chapter.

Treatment.—This, in the first place, should be prophylactic. I do not believe that we are ever under the necessity of practising coïtus under circumstances where we have reason to apprehend contagion, and still less when we have reason to suspect that we are sufficiently diseased to communicate a blennorhagia. Mediate coïtus has been recommended where there is reason to fear contagion; it certainly is a means of prevention, but not an infallible one.* The coïtus attended with the least risk is that which is quickly performed, is not often repeated, and which is complete, as the ejaculation may carry away the contagious matter which might have entered the urethra. For the same reason it is of advantage to urinate immediately after the act; the latter, however, should not lead one to dispense with thorough ablutions with some mild astringent lotion. Those who have suffered, if their

* The *intermediate* consists of a small sac made from cæcum of a sheep. This discovery, which by its utility deserves the gratitude of the public, gave to the unfortunate Englishman who left to it his name, such an unenviable notoriety, that he was obliged to assume another.

memory serve them, will admit that a surprise, carelessness, too much confidence in the person with whom they had intercourse, prolonged coïtus, a false shame in asking for the means of ablution, were among the circumstances which led to their misfortune.

As in the case of chancre, some advise in this disease, the abortive method of treatment. This can be proper only at the commencement of the disease, before inflammation appears; in fine, at the very outset of the malady. Now, the interval between the suspected coïtus and the first appearance of the inflammation is not always the same, for sometimes it occurs in twenty-four hours from the application of the cause, whilst in other instances seven days have passed before it becomes well marked: then, the means could no longer be abortive, but on the contrary would tend to aggravate the inflammation, to prolong its duration, and to produce serious consequences. I shall never forget the case of a man whose absent wife was expected in a very short time after he discovered that he had contracted a blennorrhagia. He applied to me for a sure method of at once arresting the disease. As I could not promise this, he consulted another practictioner who advised a caustic injection into the urethra, which produced a most severe and painful inflammation of the canal and of the bladder. I was requested to treat this patient, who was confined in his bed for a month, during which time the most energetic antiphlogistic treatment was required.*

Could we be consulted at the very moment of contagion, when the virus is producing its first effects, and were there a characteristic symptom of this period in blennorrhagia, we should act at least rationally in trying to destroy the cause at the part affected, as well as its effect, which must then be local and very limited. But this is very seldom possible. Besides, it is necessary that the point

* Mr. Langston Parker, in a letter to the writer, dated May 31st, 1853, thus expresses his opinion of the abortive treatment in blennorrhagia:

"When a patient seeks advice before the inflammatory symptoms are set in, an attempt may be made to extinguish the disease by what has been called abortive treatment, but if there be decided marks of inflammation and any pain in micturition, and if the disease have existed more than twenty-four hours, this treatment will be attended, to say the least, with risk, if not with injury, and under the most favorable circumstances it will not always succeed."

In addition to the above extract from the manuscript copy of the third edition of his valuable work on the "Modern Treatment of Syphilitic Diseases," now in preparation, which he has had the kindness to furnish me, he observes, "but understand, I never employ the nitrate of silver in stronger solutions than from 2 to 5 grains in 8 ounces of water. I have seen death result in one case from a stronger solution. For the details of another fatal case, from the nitrate of silver, see the work already quoted of Mr. H. J. Johnson, p. 59. We think that it may be safely asserted that the majority of the London and Dublin surgeons are opposed to the abortive treatment, except under the circumstances mentioned by our author, with whom, as will be observed, M. Parker so strongly coincides, During our recent visit to Dublin, Mr. Adams, of the Richmond Hospital, assured us that it was not a favorite method in that city, and that in Dublin it is called the "abominable" treatment! We have tried the chloride of zinc, as proposed by Mr. Lloyd, of St. Bartholomew's Hospital, London (*London Lancet*, Dec. 1850), and though at first much pleased with its effect, have been taught by further experience, that in some of our *supposed* cures, we had produced only a temporary suppression of the discharge. We still prefer this substance to the nitrate of silver, as we are satisfied that it causes less pain.—G. C. B.

of the mucous membrane affected should be discovered, before one application can be really topical, direct and limited to the lesion; this may be done, in affections of the glans, the prepuce, and, under certain circumstances, of the vulva; but the most common form of blennorrhagia, the urethral, does not admit of an application so methodical, so direct; we should have reason, therefore, to apprehend an extension of the inflammation from the application of an irritant to the sound portion of the mucous membrane.

At one time the sulphate of zinc was much employed; at present, however, preference is given to the nitrate of silver. Carmichael was the first in England, as was M. Debeney in France, to highly extol this method to which I shall again refer.

Besides, it should be well known that the pretension to cut short a blennorrhagia is an old one, and that the abortive treatment was long since tried, judged, and condemned. Indeed, Charles Musitan professed to cure a gonorrhea in three days by injections. If we employ them when the purulent discharge first appears, it is at once arrested. If they be used before the discharge has appeared, whilst the parts suffer from an extraordinary itching, the disease is prevented. Astruc, who quotes Musitan, has already remarked that unfortunately for the debauchee, both reason and experience demonstrated the *falsity* of this method, and that it is possible in place of preventing a gonorrhea sometimes to operate when no disease exists.* Finally, Astruc very justly remarks, that physicians are seldom consulted whilst gonorrheas are forming, and still less before they have appeared.† This passage from Astruc is very remarkable.

For my own part, when there is but a suspicion of congestion, or when the inflammation has commenced, I recommend, distinctly, rest of the organs, bodily repose, abstinence from food and drink which can render the urine irritating, or excite or inflame the genito-urinary mucous membrane; then follow emollients, baths, diluent drinks, a diet not too severe, and most powerful antiphlogistics when the inflammation is really established. If the patient is young, vigorous, and the inflammation very active, very painful, I at once abstract blood and thus greatly promote resolution, and a decided resolution. I have never found that antiphlogistics, even when used for a length of time, produce the chronic state to which blennorrhagic discharges too often tend. The contrary I have very often observed; I have seen, indeed, that the cases which most readily become permanent, are those in which the abortive treatment has been tried, and in which violent means have been employed. When the symptoms of a decline are apparent, and the violence of the inflammation is less marked, I have recourse to anti-blennorrhagics, to a combination of cubebs and copaiba. In the last place, and when the inflammation is extinguished, if the discharge persists, I resort to injections. With regard to the order in which injections should be used, I am entirely of Swediaur's opinion. I prefer astringent to caustic injections, and when I wish to produce

* T. iii. p. 86. † T. iii. p. 87

the effects of the latter, I prefer the solid nitrate of silver, which is more easily managed than the solution of the same salt. I believe that it is of great advantage in the treatment of blennorrhagia, to isolate, as much as possible, the inflamed surfaces; thus, in balanitis, in vulvitis, and in a certain stage of vagnitis, we may with lint, or charpie, or wadding, produce this isolation. But such is not the case with urethritis; the tents and foreign bodies which we suffer to remain in the urethra, can only exasperate the inflammation. The same effect would be produced by plugging the vagina, in females in whom it is narrow, and whilst the inflammation is at its height. The details of the treatment will be particularly exposed in the following chapter.

CHAPTER II.

BLENNORRHAGIA IN THE MALE.

SECTION I.

BLENNORRHAGIA OF THE URETHRA.

Causes.—There are certain predispositions to urethral blennorrhagia in the male which may be called organic; thus, its development may be promoted by the unusual size of the penis, a large meatus urinarius, and hypospadias. These conditions favor the introduction of muco-pus in the urethra. This is particularly the case with hypospadias, which prolongs, so to speak, the meatus towards the scrotum, enlarges the opening of the urethra, and brings the mucous membrane in contact with that part of the vagina in which the humors are collected. These etiological notions should prevent us from taking any steps by which the meatus shall be increased in size.

In discussing the etiology of blennorrhagia in general, I endeavored to appreciate the influence of age, temperament, aliments and certain antecedent pathological conditions. I have stated that the direct causes were physical, chemical, or pathological. Thus, the passage of a calculus through the urethra, the introduction of a catheter, an irritating injection, may all produce a muco-purulent secretion. Too frequent connection, or that performed with organs of disproportionate size, masturbation, menstrual blood, cancerous ichor, the lochia, the product of a uterine or vaginal catarrh, are among the causes which have been accused of giving rise to blennorrhagia.

I designedly repeat, that specific pus, the pus containing syphilitic virus, is, in my opinion, the most frequent and powerful

cause of blennorrhagia. Those authors who have denied that this virulent matter may produce a syphilitic blennorrhagia, have admitted that it may act as an irritant to the mucous membrane, and at the same time that they have denied to it the power of producing a primitive syphilitic blennorrhagia, they have acknowledged that it may give rise to this disease, but under a secondary form. This virus therefore deserves a prominent place among the causes of the disease, and this fact should not be forgotten when we come to its treatment. Indeed, to render it complete, after anti-blennorrhagics, we should adopt the treatment of chancre, distinctly understanding that blennorrhagia should be regarded as a specific disease.

Seat.—Attempts have been made to mark the point of the urethra affected in the form of blennorrhagia under consideration. According to my observation, it is found most frequently at the commencement of the canal. Thus, Stoll fixed upon that point of the canal which corresponds to the frænum. Desault speaks of the fossa navicularis. In the two criminals dissected by Hunter, the urethra was somewhat more than ordinarily injected, especially towards the glans. Feu Cullerier also mentions the fossa navicularis, and lastly, M. Ph. Boyer, having made the autopsy of a subject connected with blennorrhagia, noticed a redness at the anterior part of the canal. Swediaur maintained that in all cases, the disease is seated in the fossa navicularis; according to him, when the inflammation extends to a greater depth, it is owing to improper treatment, the sudden suppression of the discharge, or to some internal cause.

The appendages of the urethra have also been designated as being the seat of the disease in question. Thus Astruc speaks of the vesiculæ seminales, the prostate, Cowper's glands, and the lacunæ of the urethra. William Rondelet believed that in cases of virulent gonorrhea, the disease was particuly seated in the prostate gland. M. A. Severin points out the kind of lesion of this gland; it is an abscess. It is known that before the time of Morgagni, the majority of writers admitted the existence of ulcerations which secrete the purulent matter, which, in their opinion, could not be produced except by a mucous membrane in a solution of continuity. The idea of locating the disease in one of the glands annexed to the urethra, was suggested by the abundance of the discharge. Whatever may be its seat, the anterior part of the urethra is really that which is first and most frequently affected. At this point, as Benjamin Bell remarked, blennorrhagia in its first stage is seated, from which, by extension, it may invade other points of the urethra, and extend not only to Cowper's glands, the prostate, the vesiculæ seminales, the bladder, and even reach the kidneys. Blennorrhagia has, therefore, really involved all the different parts mentioned by authors. But these are exceptional cases, complications and accidents. Thus, certain inflammations of the prostate gland and bladder, are only complications of urethral blennorrhagia; such is also the case when the tissues surrounding the urethra become inflamed and suppurate, producing abscesses which are called *peri-urethral.*

Symptoms and Progress.—Blennorrhagia appears in from one to three days after the suspected coïtus. "I have observed," says Cullerier, the uncle, "what is extraordinary, the discharge commence the next day, and I have seen it, in two instances, first show itself not until a month afterwards." Cullerier, the nephew, and M. Ratier, refer to an instance in which the disease did not appear until five months afterwards coïtus. The following is the report of it, given by these authors: "There is, at present, in the *Hôpital des Veneriens*, a man aged fifty-eight years, of a good constitution, accustomed to the enjoyment of excellent health, and who never had the venereal disease. One day, together with four other individuals who did not suffer, he had connection with a woman. Five months afterwards, a blennorrhagia appeared. It lasted fifteen days, when the discharge ceased, and he became affected with mucous tubercules about the anus, for which he required my services. Whence these morbid phenomena? For eight years previously, this patient had had no connection with a female, nor had he after that above mentioned."* For myself, I can only say, that this case is unique.

Generally the discharge is not the first symptom which appears: some patients experience at first a peculiar kind of itching in the anterior part of the urethra, and a feeling of weight in the perineum; others have an uneasy feeling in the groins; some complain of general indisposition, and of chills; cases have been observed which have all the symptoms of blennorrhagia, minus the discharge, constituting, as it were, a *dry* blennorrhagia, which ordinarily is but a stage of true blennorrhagia. Sometimes, on the contrary, the discharge precedes all the other symptoms; the patient perceives stains upon his linen, and yet he has suffered nothing.

But, in the majority of cases, the following is the order of events: the patient feels an itching sensation at the commencement of the urethra, which increases, and soon becomes changed to pain, particularly at the moment of urinating; there follows a discharge of a thready, slightly-troubled humor, which dries upon the linen. Astruc observes: "The first oozing from the urethra is attended with a pleasant sensation, and *glues together* the lips of the meatus."† This humor looks like nasal mucus. When it becomes dry, the first jet of urine breaking the mucous scab (which is soon formed again), produces acute pain. But the lips of the meatus become swollen, and of a redder color; the pain in urinating increases, and as the urine traverses the urethra, it gives rise to a burning sensation; hence the popular name of *chaudepisse*, that of *arsure*, and *internal burning* of the penis, long ago employed. In proportion as the disease becomes more severe, the pain seems to extend more and more towards the neck of the bladder; it may be produced by pressing along the course of the canal; the sensibility and tumefaction of the walls of the urethra

* *Dictionnaire de Médecine et de Chirurgie Pratiques.*
† Astruc, t. iii. p. 2.

are found gradually to extend towards the posterior part, and the matter discharged comes daily from a more distant point. These symptoms showing that urethritis is fairly established, are generally observed about the fifth day. Whilst passing urine, the pain is most violent; it is felt strongly in the perineum, and is increased when the patient crosses his legs, and during defecation, particularly if he be affected with hemorrhoids. The emission of semen is also painful; when the inflammation extends beyond the membraneous portion of the urethra at the moment of ejaculation, a lacerating pain is felt. The semen issues, foaming as if overflowing, and this occurs shortly after the contraction of the muscles of the perineum. The erections are painful and frequent in proportion to the abstinence of the patient. The pain is accounted for, by the passage of the urine over an inflamed mucous surface, by the inflammation itself, and the obstruction arising from the tumefaction of the urethra and the ejaculatory ducts, a tumefaction which impedes the emission both of semen and of urine.

The stream of the urine is modified; sometimes it is bifurcated, and it is always diminished in volume. If the inflammation has reached the prostate, a complete retention may follow.

The ingredients and the color of the discharge vary; it consists of a mixture of pus and mucus, or, as it is now called, *muco-pus*. At first, it is of a whitish tinge, and of the consistence of cream; then it becomes yellow, and afterwards green; it has a bloody tinge in very acute cases. Astruc remarks that the discharge is of a greenish yellow color, such as we observe in the last stages of pneumonia. The blood may even flow in the form of a urethral hemorrhage.

During the progress of the disease, the prepuce and the glands become more or less swollen; the summit of the latter resembles a cherry nearly ripe. The tissues subjacent to the mucous membrane of the urethra, become likewise swollen. The little glandular bodies in which terminate the ducts of Morgagni, Cowper's glands, and the prostate itself, are all sometimes inflamed; they rarely suppurate, particularly the latter gland. The canal feels knotty. The abscesses which form here and there open within the urethra, or externally, this last termination becoming more frequent as we approach the glans. On the sides of the frenum, two small collections sometimes form, which always open externally. Cases do occur in which the inflammation extends over the whole urinary apparatus.

Erections occur during the progress of a blennorrhagia. But when the latter is severe, and the patient is very nervous, these erections may become very frequent, painful, and obstinate. Then occurs that symptom to which has been applied the name of *chordee*. It is often very troublesome when the patient is in bed. During an attack of *chordee*, the penis is hard, very sensitive, sometimes even painful. It preserves its natural shape, or it becomes curved; in the majority of cases it is bent downwards, sometimes to one side, and rarely upwards. Astruc has noticed this last curvature; Benjamin Bell twice observed it; I have my-

self seen it. *Chordee* may occur at any period of blennorrhagia; but it is found most frequently when the inflammation is completely established, in the second stage of Benjamin Bell. It has been seen to remain even after the subsidence of all inflammatory symptoms.

Hunter recognized two varieties of chordee, one inflammatory, the other spasmodic. In the first, the inflammation is not limited to the mucous membrane and the little glands, but it affects the reticular tissue of the urethra, into which coagulable lymph is effused; these cells become adherent, the walls lose their pliancy, and the canal, no longer able to follow the cavernous bodies in their development, assumes the office of a cord, by which the curve is maintained; and hence the curvature of the penis. The spasmodic chordee is but a nervous phenomena; it appears and disappears, but at no regular intervals.

Is there a dry blennorrhagia? According to Swediaur, the inflammation of the urethra sometimes becomes so intense, that its internal surface and the orifices of the glands which border upon it, yield no secretion, as occasionally occurs in inflammation of the mucous membranes of the nose and lungs. In a severe catarrh, all discharge is arrested. This Fabre denies. He maintains, on the contrary, that the inflammation in these cases is not severe. A very small number of carefully-observed cases have been recorded, establishing the absence of the discharge with all the other symptoms of blennorrhagia. I have really observed cases of urethritis without any morbid secretion. Cullerier and M. Ratier report a case which is perhaps the most authentic on record. But, in my opinion, this form of urethritis is never dry throughout the disease; the discharge is wanting either at the commencement or towards the end. It was at the latter period that it became *dry* in the instance mentioned by Cullerier.*

The duration of the principal symptoms of blennorrhagia varies from ten, fifteen, and even to twenty days; when it begins to subside; then the patient suffers pain only during the passage of the urine, the erections are less frequent, and the matter discharged is less in quantity. Besides it turns yellow, then of a dirty white color; it puts on, in fine, the characters of mucus, which denotes the most fortunate termination of the disease. But, when after the cessation of the principal symptoms, the matter discharged does not assume this consistence, this particular elasticity which characterizes mucus; when, on the contrary, the drops easily separate, like those of milk, somewhat thickened, we have reason to apprehend a chronic state. Then the discharge sometimes assumes an intermittent character; it ceases, still to reappear; it is, as is commonly said, a *relapse*. It consists sometimes of a single

* Dr. Beadle reported to the *New York Medical and Surgical Society*, March 7th, 1840, the case of a young man, who was under his care twice within the year, for an affection of the urethra resembling gonorrhœa in all its symptoms, except "*there was not the slightest discharge.*" This patient had impure connection forty-eight hours before his attack, and he was cured, in both instances, by an injection of Nit. Arg. and mucilaginous drinks. Vide *N. Y. Journ. of Medicine and Surgery*, Oct. 1840, p. 435.—G. C. B.

drop, which is seen in the morning, if the glans be pressed before urinating. The least imprudence in diet, coïtus, &c., produces a return of the discharge. Occasionally, however, connection with a healthy woman causes it for a long time to disappear. In these different states, pain properly speaking does not exist, the discharge seems entirely passive, nothing indicates the least irritation of the urethra; the canal may be said to have contracted a habit of an abnormal secretion, which requires no inflammatory congestion to produce it. This is the blennorrhagia of Swediaur, which I have partly described. Generally, then, the urine does affect the canal, and the proper relations between the properties of this fluid and the sensibility of the urethra, would seem no longer to exist.

Diagnosis—Here the question of the chancre *larvé* again presents itself; I have already discussed it in speaking of blennorrhagia in general. [In the text, the author here repeats the observations made at p. 62, which we have taken the liberty to omit.—G. C. B.] Chancre at the commencement of the urethra is distinguished from blennorrhagia by the induration, tumefaction, and pain under the glans. In separating the lips of the meatus, the ulcerated surface may sometimes be detected. The discharge from the urethra is small in quantity; it is badly assimilated pus, rather serous than mucous, and generally there is a bubo more or less marked.*

Like all other forms of blennorrhagia, it is difficult to distinguish the simple urethral blennorrhagia, that which is but a catarrhal inflammation, from that which is virulent. But still, when in this case we can establish a real incubation, when the discharge has a tendency to become chronic, we have reason to suspect a specific disease; on the contrary, where it follows excessive coïtus, when its progress is rapid, the attack almost immediate after exposure, if the termination is sudden, rapid, there are strong presumptions in favor of a simple blennorrhagia. If, at a later period, syphilitic accidents supervene, our diagnosis is rendered certain.

Prognosis.—Urethral blennorrhagia is more liable to be followed by stricture, affections of the bladder, kidneys, and in the male, of the prostate gland. At an advanced age the latter accidents are most frequent. Orchitis is the most common of all the accidents.

Pathological Anatomy.—As the opportunity seldom occurs of making the autopsy of a subject affected with blennorrhagia, anatomy, on this point, has but little to offer.†

Accidents.—I have already spoken of chordee and peri-urethral abscesses; the other accidents in part mentioned under the head of prognosis, will be examined separately when we come to consider the consequences of blennorrhagia.

Treatment.—In speaking of blennorrhagia in general, I have

* Mr. Henry James Johnson observes (*op, cit.* pp. 19, 20), that the pain in making water is not so decidedly referred to the navicular fossa, or the orifice, as in blennorrhagia. The induration in question, he adds, is found from an inch to an inch and a half from the orifice, is circular, yet flattish, about the size of a three penny piece, or less—tender to the touch—and gives to the finger just the same impression as is conveyed on pinching up an indurated syphilitic sore upon the surface.—G. C. B.

† Vid. p. 69, for remarks here repeated in the text.—G. C. B.

indicated the basis of our treatment; I now proceed to enter into the details and the methods particularly adapted to the urethral blennorrhagia.

1. *Abortive Method and Injections.*—The abortive method here offers the greatest pretensions; 1. It proposes rapidly to extinguish the inflammation, and thus to prevent the accidents of the disease. 2. To neutralize the virus and to destroy it *in situ.* I have expressed my opinion of this method in my general remarks on blennorrhagia. I have stated that it would be rational at the very onset of the disease, before inflammation is really established, and at the moment of inoculation. Now, the surgeon very seldom is consulted at this stage of the disease. It is only at this period that M. Ricord proposes this method; it is therefore applicable only in very exceptional cases. M. Debeney generalizes it and resorts to it in all stages of the disease, even in blennorrhea, and according to him, none, even of the most chronic cases, resist it when well managed. M. Debeney prefers caustic injections.

A very old, very general, and almost popular reproach against injections, is their liability to produce strictures. To this it has been replied, that stricture, in reality, is but an inflammation of the urethra, which has become too protracted; and that the best method of avoiding this is to cut short the inflammation, in fine to effect its absorption. This reply, first made by Benjamin Bell, would be unanswerable if we did truly subdue the inflammation, or if we only abridged its duration. Now, of this there is but very little proof. During an entire year I made use of caustic injections in blennorrhagia, and once only did I obtain a cure which did not require a week's treatment. In almost all the other cases the cure was retarded, and in three a urethritis very rapidly produced a stricture, which compelled me to discontinue the injections and to substitute in their place antiphlogistics of a decided and energetic character. One of these patients was finally cured after a moderate dilatation with the yellow wax bougies; the other two, weary of the tedious treatment, demanded their discharge; six left with blennorrheas, which I could not cure. Among the latter, several have probably suffered from strictures. I have been told that I employed the injections in every stage of the disease, which is true; otherwise I should never have had before me a large number of observations. I am convinced that those who would employ the abortive method only when the inflammation is about to commence, will employ it but very rarely, for the reason already given, that we are almost always consulted too late. What I have said in reference to the prevention of inflammation, I would repeat for that of syphilitic infection. Still, even for this purpose we are almost always too late. I am convinced that many practitioners, instead of treating the first stage of the disease, as they suppose, in reality treat different stages, and for this reason, their practice differs less than they imagine from that of M. Debeney.

Therefore I consider the abortive method liable to reproach, for instead of cutting short the disease, it produces the opposite effect. As to the cases of orchitis, of abscesses, of arthritic and opthalmic

inflammations, which have been attributed to the use of caustic injections, I believe the picture has been greatly overdrawn. Soon I will notice the accidents which even M. Ricord admits. I have already mentioned a case where a caustic injection did violently inflame the urethra and the bladder, so as to compromise, if not the life of the patient, at least the peace of his friends. Further, this was the most severe accident which I have observed. But the most common accidents, and those most to be apprehended, are not of a primary but a consecutive nature; these are, I repeat it, strictures. It is evident that a cauterized, burnt mucous membrane will undergo a solution of continuity, a kind of ulceration, the reparation of which must always be accompanied with a diminution in the diameter and elasticity of the canal. What has deceived practitioners who believe in the efficacy of caustic injections, is, that there really follows, after the pain and immediate effects of this method, a suppression of the discharge, a subsidence of one of the symptoms of the disease. But with this suppression we have not subdued the urethritis; it has been rendered dry only, and this is but a transient, a temporary effect. Now caustic injections are not the only means which can thus suppress a blennorrhagia; the same result may be obtained by the powerful agents belonging to a rational or empirical therapeutics of the disease. For example, cubebs often produce this effect, and I have suppressed the discharge in more than one instance by the application of leeches to the perineum. But in the majority of cases the discharge returns, and these relapses should be noted and acknowledged if we would advance science.

In my general remarks on blennorrhagia, I have already shown that the pretensions of this abortive treatment are very old. I have quoted the critical remarks of Astruc. Behold the formula of Musitan, which according to the pretensions of the above named author, was to cure instantaneously: "Take of plantain water eight ounces, in which dissolve some sweet mercury reduced to a very fine powder; agitate them together, and with an ivory syringe inject an ounce of this fluid lukewarm, into the urethra three times in a day."

M. Debeney, in a case which he has denominated, *Blennorrhagia with irritation of the neck of the bladder*, employed the following formula:

℞. Nit. Argent. ʒi.
Aq. distill. ℥i.

According to M. Debeney the surgeon must himself administer the injection; having first washed out the canal so that the mucopurulent matter may not impede its direct action upon the mucous membrane; this wash should consist of a solution of nitrate of silver about one-thirtieth of the ordinary strength; and should be allowed soon to escape. Immediately after this another injection is made which should be retained in the canal for a minute, if we would produce a decided impression. The fluid enters the canal

more deeply by pressing with the fingers towards the root of the penis.

The following is M. Ricord's formula, and his manner of proceeding:*

℞. Nit. Argent. grs. xv.
Aq. distill. ʒi.

The patient sits upon the edge of a chair; the penis is put slightly upon the stretch, and the extremity of the syringe is introduced within the canal. The lips of the meatus should be so pressed as closely to embrace the canula. The injection must be sudden; in this manner we take the mucous membrane by surprise, otherwise the urethra would close upon itself and oppose the further progress of the fluid; one half of that contained in the syringe is sufficient to moisten the whole canal. The patient should be informed of the sensations which he will be likely to experience, lest he attribute to the progress of the disease what is but the transient effects of the treatment. This injection produces severe pain, the discharge is augmented, a serous, sero-sanguinolent or bloody exhalation, appears, and this is soon followed by phlegmonous pus forming a swelling in the urethra. The first emission of urine is extremely painful, the pains being most intense in that portion of the urethra corresponding to the glans; the stream of urine may assume every variety of form observed in cases of stricture. These pains may be mitigated, if the patient will urinate with the penis immersed in cold water, and if he will refrain from making any efforts. These accidents subside in the course of twenty-four hours; if the bloody exhalation and suppuration continue, the injections should not be repeated until they disappear.

In certain patients blennorrhagia ceases suddenly after the discharge of some globules, the cure is preceded by the discharge of a kind of thready mucus which is of short duration. Sometimes a greenish muco-purulent matter appears; in this case we may expect that the blennorrhagia will continue.

If the abortive treatment fail, we find on the third day that the characteristics of the disease are reproduced; sometimes, however, it is not till after a longer interval, some five or six days for example, that the discharge re-appears. These are the cases in which a complete cure has been supposed to have been obtained, but in which there really has been but a suppression of one element of the disease, viz. the muco-purulent discharge. The careful observer who will follow these patients, and closely question them, will learn that there remain in the urethra modifications in its sensibility, unusual heat, especially at the moment of the emission of urine; sometimes there is a real pain, or an itching sensation, with a disposition to urinate frequently. The circumstances show clearly, in fine, that a urethritis remains, that there is a dry blen-

* M. Debeney claims this formula.

norrhagia which will soon exhibit all the characters of a true blennorrhagia.

When the discharge reappears the injection should be repeated, if it has not forfeited the confidence both of the practitioner and patient. M. Ricord admits that the injection of nitrate of silver according to the formula which he has so long employed, may produce fainting, hemorrhage and retention of urine. Add to these, the pain experienced at the moment of injection, and the inconveniences of the method are already manifest.

It should not be forgotten that the abortive method of M. Ricord does not consist exclusively of injections of greater or less violence, but that in addition to them, he recommends the use of balsams, of which we shall soon speak. Now, as these balsams are given in heavy doses, as they are very powerful, and may of themselves speedily cure blennorrhagia, we can comprehend how those who have confounded in the same statistics the results of M. Ricord's practice with the facts of M. Debeney, have furnished a very decided proof of their ignorance of the most common rules of true medical statistics.

What I have stated in relation to M. Ricord's practice, has been based upon his lectures reported in the *Gazette des Hôpitaux*. Now, I find in his Notes to the second edition of Hunter,* that he admits the inconveniences to which we have alluded, and that he has almost entirely renounced the use of injections. At present, M. Ricord prefers the following formula:

℞. Aq. Ros. ʒvi.
Sulph. Zinc.
Acet. Plumb. āā grs. xv.

M. Venot has tried injections of chloroform; he has published instances of cure resembling those which we have cited as being favorable to the employment of very strong injections of nitrate of silver. It is in the commencement, a period in which the practitioner seldom sees a patient, that chloroform is recommended.

2. *Balsams.*—We now come to the consideration of the balsams, at the head of which must stand *copaiba*. This is an oleo-resinous substance which is obtained from an American tree, growing in the Antilles, which tree has also been elsewhere cultivated. M. Guibourt prefers, for internal use, the copaiba of Cayenne. It may be administered in doses from ten drops to two ounces in a day. Pure and in the liquid form, the copaiba has a prompt and powerful action. But the disgust, the retching and vomitings which it produces, have compelled practitioners to employ some correctives, or adjuvants, in order that it may be tolerated by the stomach. Combined with magnesia, it has been rendered solid so as to be made into pills. It has also been inclosed in capsules. The pills when very hard are difficult of digestion, and are sometimes passed entire by stool. The same objection applies to the capsules.

* P. 157.

Besides in this form, it is difficult to give very large doses of copaiba, at least to increase considerably the number of pills and capsules without disturbing the stomach. In the form of potion it is more sure, but even then it still requires correctives; these I will specify by formulæ. The most celebrated is that of Chopart:

℞. Copaib.
Spt. Vin. rect.
Syr. Bals. Tolu.
Aq. Menth. pip.
Aq. Fleur. orang. āā ℥ ii.
Alcohol, Acet. ʒ ii.

With all of these corrections, however, there are some patients who cannot tolerate the use of copaiba, even when thus administered. Yet I have seen those who could take it without repugnance; one of these was almost a *gourmand*. The above potion is given in doses of a tablespoonful, from two to six times in a day.

At the *hôpital du Gros Caillou* the following formula of M. Gimelle is much esteemed:

℞. Copaib. ʒ iii.
Cubeb. ʒ ii.
Vin. Aromat. ℥ iv.

This is to be taken in a single dose, having previously shaken the bottle strongly. The aromatic wine is intended to prevent vomiting.

Copaiba has also been given by enemas, according to the following formula:

℞. Copaib, ʒ v.
Ov. Vitel. ʒ i.
Ext. Op. (gummy), gr. i.
Aq. ℥ viss.

Before using the injection of copaiba, a simple lavement should be administered, so as to empty the rectum.

I have been accustomed to combine copaiba with cubebs in the following manner:

℞. Copaib, 1 part.
Cubeb, 2 parts
Ess. Menth. q. s. ft. Electuary.

This forms an electuary, of which about half an ounce is to be taken in the course of a day. A bolus is made of this by the patient himself, and covered with unleavened bread. He is generally cured after having used about four ounces of the above electuary, it being distinctly understood that he has been suitably prepared by the means which I shall presently indicate.

Some practitioners begin with small doses of copaiba, which they gradually increase, without, however, ever reaching a very

strong dose. This mode of administration is less efficacious and more likely to disturb the digestive organs.

Patients who have taken copaiba are attacked first by an intense thirst, the throat becomes dry, and they drink abundantly. According to M. Ricord, they must not indulge in drink, that they may pass urine less frequently, and this, as it were, will be rendered more balsamic, more impregnated with the principles which it derives from the blood. Copaiba also produces other effects. Sometimes it acts upon the stomach in such a manner as to provoke vomiting by the disgust which it occasions. These vomitings now and then occur at a later period, and proceed from another modification of the stomach, being then rather the effect of an irritation of the ventricle. More frequently the intestinal canal suffers, active purgation being produced. Both vomiting and purging are sometimes present, in fine symptoms of cholera morbus. Sometimes, on the contrary, there is constipation. It may happen, and this is most fortunate, that the bowels are not unusually free. In all these cases the blennorrhagia may be suppressed even rapidly, but this result, it must be admitted, is more frequent and most complete when the digestive organs have well tolerated the copaiba.

Attempts have been made to explain the *modus operandi* of this substance. The majority of the French school attribute the cure to a displacement of an irritation from the urethra to the intestinal canal. The Italian school recognizes in copaiba neither an irritant nor a specific, but an antiphlogistic *hyposthenisant;* instead of accelerating and strengthening the pulse, as is generally supposed, copaiba, on the contrary, diminishes both its force and frequency. According to M. Ricord, there is an element of the copaiba which enters the blood, reaches the kidneys, which then secrete urine having medicinal properties which produce a beneficial effect upon the lining membrane of the urethra.

This question is of but little consequence, but it is of importance to remember that copaiba is the most powerful of anti-blennorrhagics. If it is not often employed it is because it is *antipathic* to most patients, in whom it produces an unconquerable disgust.

There is an accident which I have not yet mentioned, and which may deceive the young practitioner; it is the affection of the skin. This is sometimes an erythema, a variety of roseola, or an urticaria. These effects of copaiba are more frequently observed in the spring and autumn. In the majority of cases, this eruption, which varies in different individuals, is of a simple character and soon disappears; however, as it is proved that it does not promote the cure of the disease, but that it rather tends to aggravate it, the copaiba must then be discontinued and the patient allowed repose, during which he may take some acidulated drinks preparatory to submitting to the use of some other anti-blennorrhagics. Copaiba, combined with cubebs, according to the formula which I shall presently mention, very rarely produces this eruption on the skin. Let us examine this substance, cubebs, for a moment. It is a variety of pepper reduced into powder, having somewhat the odor

of copaiba. It has a hot, pungent, and slightly bitter taste. As I have already stated, I often combine this powder with copaiba so as to form an electuary. It has also been used both in the form of an extract and infusion. The powder, however, is that which is most generally employed. A dose of from $2\frac{1}{2}$ to 5 drachms is given twice a day. M. Puche sometimes gives as much as $2\frac{1}{2}$ ounces in a day.

Cubebs does not disturb the stomach nor inspire disgust like copaiba, it produces vomiting less frequently, and especially, it does not purge. Indeed it often gives rise to constipation. Sometimes the stomach is swollen; the appetite becomes keen, and nutrition most active; rarely does it produce cutaneous disease like that from the use of copaiba. The powder is placed in half a glass of an infusion of lime-tree and orange peel, or it is enveloped in bread, or capsules, or coated with sugar in the form of saccharated capsules.

M. Puche's treatment.—The following is his practice in cases of acute blennorrhagia. His prescriptions which I here insert, are copied from his own writings. M. Puche never administers copaiba before the twentieth or twenty-eighth day from the commencement of the discharge.

GUMMY SYRUP OF COPAIBA.

℞. Copaib pur. ℥ ii.
Gum. Arab. ℥ ss.
Aq. ℥ iss.
Ess. Menth. pip. ♏ xxxii.
Syr. Sacch. ℥ xiiss.

Dose from 1 *to* $1\frac{1}{2}$ *and* 2 *ounces of this emulsion in a day.*

BALSAMIC GELATINOUS BOLUS.

℞. Copaib.
Terebinth. Inspiss. āā ℥ iss.
Cubebs, ℥ iii.

Dissolve the turpentine over a hot-water bath, and then incorporate with it the copaiba and cubebs; divide this mass into 100 *boluses, which cover with gelatine. Dose from* 12 *to* 24 *in a day. Two to be taken at once, at regular intervals.*

M. Puche administers cubebs according to the following method:

POWDERED CUBEBS.

Take 1st day, $2\frac{1}{2}$ drachms for a dose.
" 2d " 5 " in 2 doses.
" 3d " 1 ounce in 3 "
" 4th " $1\frac{1}{4}$ ounces in 4 "
" 5th " $1\frac{2}{3}$ " in 5 "
" 6th " 2 " in 6 "
" 7th " $2\frac{1}{3}$ " in 7 "

If the medicine arrest the discharge, says M. Puche, I diminish the dose in the following proportion:

Take	8th day,	$2\frac{1}{3}$	ounces	in 7	doses
"	9th "	2	"	in 6	"
"	10th "	$1\frac{2}{3}$	"	in 5	"
"	11th "	$1\frac{1}{3}$	"	in 4	"
"	12th "	1	"	in 3	"
"	13th "	5	drachms	in 2	"
"	14th "	$2\frac{1}{2}$	"	in 1	dose.

These doses are to be taken in a well-sugared lemonade at regular intervals, between meals.

When the disease is of more than two months standing, and has become chronic, M. Puche employs the following injections:

℞. Nit. Argent, grs. $1\frac{1}{2}$
Aq. dist. ℥ iii.

*An injection every morning and evening for five days.**

℞. Nit. Argent, grs. iii.
Aq. dist. ℥ xii.

An injection morning and evening for five other days.

M. Puche adds: after these injections have been used for six days, the patient is to take no medicine for the next five days. Very frequently the discharge is entirely suspended; but whether it does or does not continue, it is prudent to give the cubebs in $2\frac{1}{2}$ drachm doses for eight days.

Author's Treatment.—The following is my method of treating blennorrhagia. I always commence with antiphlogistics, the activity of which is proportioned to the duration and severity of the disease. Thus, in the majority of cases, I recommend in the first place the use of baths, a soothing *tisane*, and quietude. If the patient is strong and plethoric, and the disease severe and painful, accompanied with frequent erections, to the above I add the abstraction of blood; this is generally effected by the application of twenty leeches to the perineum. It sometimes happens that these means, aided by a mild regimen, are sufficient, that is to say, in about eight days after their use, the blennorrhagia subsides. If the discharge continues, I have recourse to indirect anti-blennorrhagics, to copaiba or cubebs, but more frequently to a combination of the two in the form of the electuary of which I have already given the formula. In conjunction with repose, the baths alone, or leeches, this anti-blennorrhagic produces a very speedy and powerful effect; very rarely does it effect the neck of the

* It will be noticed that this corresponds to the injection which I employ after the use of balsams.

bladder in the manner which is observed when antiphlogistics have not been previously employed, and when it gives rise to frequent dispositions to urinate, to high colored and sometimes bloody urine, or by a more or less decided dysury.

I never resort at once to injections. I employ them only when the antiphlogistics, the indirect anti-blennorrhagics, have failed to arrest entirely the discharge. Then, only, do I make use of injections, and these not of a caustic but an astringent nature. The following is my favorite formula; it is old, not very scientific, but excellent in a practical point of view:

℞. Aq. Ros. ℥ v.
Acet. Plumb.
Sulph. Zinc, āā grs. viii.

Shake the vial. At least two, sometimes four injections in the day.

When I employ the nitrate of silver, it is generally as an astringent, and then I prefer the following formula:

℞. Aq. Ros. ℥ viss.
Nit. Argent, gr. ½

When we wish to produce a caustic effect, it is better to use the nitrate in a solid state. This may be done with a straight *porte caustique* for the anterior portion of the urethra, and with the curved *porte caustique* of M. Lallemand for the membranous and prostatic portions. We should resort to this means only in the chronic state, when we have reason to suspect that the disease has become seated on a limited extent of the urethra.

A long and extensive experience, both in hospital and private practice, with the method of treatment which I have recommended, authorizes me to declare that its results are more certain and even more rapid than those obtained by methods which make pretensions to much more speedy cures. It is easy to perceive, that in any case it has neither the inconveniences nor the dangers of that which is called the ABORTIVE treatment.

There is one phenomenon quite intolerable to the patient, and to which I have alluded in the symptomatology of the disease, viz. CHORDEE, an inflexible condition of the urethra which does not permit it to follow the cavernous body during an erection. Even here, in the majority of cases, the first and best means, is the application of leeches to the perineum. Next come the sedatives, properly so-called, such as opium, camphor and hyoscyamus. The first named are often thus combined:

℞. Camph.
Ext. Opii. āā gr. viii.
Ov. Vitel. ʒ i.
Aq. ℥ v.

For an enema.

The following pills are generally preferred:

℞. Camph. gr. ii. to grs. 6.
Ext. Opii. gr. ½ to gr. i.
Mucilag. q. s.

One, two or three pills a day, commencing in the afternoon.

Thirty or forty drops of laudanum may also be administered when the patient retires, or when the first erections occur.

Cold applications to the genital organs, to the feet, a walk upon the cold marble slabs have sometimes succeeded. The patient jumps out of bed, and by walking with naked feet upon the floor, is sometimes relieved. But it occasionally happens, that, when the patient returns to bed, and becomes warm again, the erections are stronger than before.

The hyoscyamus niger was sometimes successfully administered by Benjamin Bell, even when opium had failed. This English surgeon gave from one to eight grains of the extract, three times in a day; eight grains being administered after the patient had become accustomed to this medicine for some weeks.* But if the patient suffered from chordee during all this time, I think it would have been better to have resorted to some other means.

A number of topical applications have also been employed. I once succeeded in relieving a chordee with very painful erections, by means of mercurial ointment applied along the track of the urethra in front of the scrotum. After the employment of frictions, a thick layer of the ointment was left upon the penis. Compresses dipped in equal parts of cold water and laudanum may be applied so as to cover the penis, scrotum and perineum. Brandy, camphorated oil, bran and water, have been used in the same manner. When there is nothing more than an erection, or a spasm by which a superficial urethritis is complicated, these means may succeed. But when the chordee depends upon an inflammation which involves the tissues covered with mucous membrane, when plastic lymph is already effused in the cellular tissue, the anti-spasmodics and sedatives above mentioned will fail, we must then resort to antiphlogistics, to local and sometimes to general bloodletting, particularly if the patient be young, vigorous, and plethoric. Benjamin Bell has proposed, as have other writers, to depress the penis, and to bind it to one of the thighs. It has been recently recommended to pull upon the prepuce, to press on its extremity, so as to compress the glans and penis by its sheath. These means, which may have succeeded where the erections have not been very painful, would not only prove ineffectual but might aggravate a case of really inflammatory and painful chordee.

Hygeine must be recommended. Thus, the quantity of drinks taken should be diminished, and those used should not be of an exciting character. The patient should be advised to cover himself lightly on retiring, and to apply cold lotions to the penis.

* Vol. i. p. 246.

Consequences of Blennorrhagia.—The consequences of blennorrhagia are numerous, as an urethritis may in its course involve the whole genito-urinary apparatus. I must, however, here confine my remarks to those which are closely allied to the primary disease, the others being discussed in every treatise on surgery; thus, strictures of the urethra, chronic affections of the prostate gland, affections of the seminal ducts, could not be embraced in this work, without disproportionately increasing its bulk. But I will treat of blennorrhœa, hemorrhage, and of pains and perverted sensations in the urethra; I will afterwards consider the subject of orchitis, prostatites, cystitis, nephritis, arthritis, and blennorrhagic ophthalmia, accidents sometimes of a very serious nature, and which we should endeavor to prevent, which we must often combat, and the study of which cannot be separated from the affection of the urethra.

Blennorrhœa.—According to Swediaur, *blennorrhœa* is a passive discharge, (*fluxus passivius,*) whilst *blennorrhagia* is an active, inflammatory discharge (*fluxus activus*). In accepting Swediaur's definition, because it is generally admitted, I cannot receive it, at least in the majority of cases, in the sense in which it is used in English syphilography. Because, in my opinion, blennorrhœa, that is to say, the discharge which is generally the result of blennorrhagia, more mucous in its character and less abundant in quantity, which ceases but to re-appear; in fine, that discharge which is called a gleet, *military drop* is but a chronic inflammation of the urethra with or without a complication of an analogous inflammation of its appendages. I have already remarked that this opinion should not be received in the most absolute sense, for there may be *gleety discharges* without a previous blennorhagia, that is without an *active* discharge. I would not therefore deny the existence of a passive discharge, or at least of one which is entirely independent of an actual urethritis or one already extinct.

It is difficult to name the precise period at which blennorrhagia ceases, and a blennorrhœa begins. Some authors maintain that the discharge is no longer blennorrhagic but a *gleet*, when it ceases to be contagious, others regard it as a *gleet* when it is no longer troublesome, when the discharge is transparent, and viscous like mucus. But it is well-known how difficult it is to establish contagion from an urethral discharge, and as regards its transparency and mucous character, this may change from day to day; indeed, a *gleet* which to day may be transparent, and mucous to-morrow, may be opaque and more or less purulent, and all this may come from the least imprudence in regimen. But an examination of the causes of blennorrhœa will lead to a better idea of its nature.

Causes.—The principal and most frequent cause of a *gleet* is the persistence in a chronic form of the urethritis which caused the blennorrhagia. For, according to my views, blennorrhœa is chiefly a chronic blennorrhagia. Indeed, when after forty or fifty days the blennorrhagia does not cease, we have reason to apprehend that it will become chronic. Then, if the patient be carefully examined, as well as the circumstances by which he is sur-

rounded, it will be found that he is of the lymphatic or bilious temperament; or that he has a strumous, rheumatic, dartrous, or a syphilitic diathesis.

According to M. Cazenave, syphilis plays an important part in the etiology of blennorrhœa. In his opinion, every slight discharge which becomes permanent, is due to a morbid disposition left by the virus which first affected the urethra; blennorrhœa, in fine, is but the remnant of a virulent blennorrhagia imperfectly cured. If no particular diathesis or vice exist, it will be found that the patient has not submitted to hygienic rules; during the treatment, and the decline of the blennorrhagia, he has not observed the necessary repose, and has indulged in improper aliments and drinks, and sexual intercourse, or masturbation. Among my city patients, the discharge is maintained by the presence of a companion, near which the patient cannot remain without excitement; and in hospital practice, I have had opportunities of knowing that the very youngest of those affected with an obstinate discharge were inclined to masturbation.

In the etiology of this disease, we must not omit the influence of the absence of all treatment, or of improper treatment. In speaking of the therapeutics of blennorrhagia, I have designated as a cause of chronic urethritis the so-called abortive treatment, because it is that which most frequently fails, and which has the strongest tendency to render the disease protracted.

If we take a general view of the causes, we find that they are of two kinds, the one pertaining to diathesis, the other irritant, excitant. The first gives a chronic and specific character to the disease, rendering it exceedingly rebellious to treatment; these are, therefore, complicated cases, for to the inflammatory element there has been added the rheumatic, the dartrous, the strumous, or syphilitic. The obstacles in the way of treatment may already be anticipated, obstacles which will render it especially difficult when they depend upon a complication with a peculiar diathesis. Thus, there are patients with dispositions to catarrh, to discharges without provocation, from the ears, nose, and eyes, which, once affected with blennorrhagia, never get rid of the disease. These are the patients who may have a primary or non-consecutive gleet (*d'emblée*), that is to say, a blennorrhœa which has not been preceded by a blennorrhagia. A neglect of hygiene is chiefly the exciting cause. The patient devotes himself too much to his occupations, is guilty of luxurious indulgences, and makes not a proper selection of his aliments.

Seat and Anatomical Characters.—I have already shown that the part first involved in blennorrhagia was the commencement of the urethra, in the vicinity of the glans. The most common seat of blennorrhœa, on the contrary, is towards the end of the urethra, in the region of the prostate. M. Baumés is very explicit upon this point. However, blennorrhœa has been observed, in which the disease was less profoundly seated; there are some cases, even, in which the seat is the same as that of an incipient blennorrhagia; indeed, it happens that an urethritis becomes chronic in the same

situation in which it has been primarily acute. Of this I am certain, for by the application of the nitrate of silver to the fossa navicularis, I have removed the most obstinate cases of blennorrhœa. When the latter is symptomatic of stricture, it is generally towards the curve of the urethra that we find the most important lesion, viz. a thickening or induration of the sub-mucous cellular tissue. Sometimes it is difficult to decide upon the seat, the anatomical characters of blennorrhœa; in these cases, there is that disposition to mucous discharges of which I have spoken in treating of the causes of the disease: the mucous membrane of the urethra may here preserve its natural appearance, like that of the nose, which presents nothing abnormal, even in a state of well-marked hyper-secretion.

Symptoms.—The discharge in gleet is not always constant; sometimes there is a kind of intermission: it thus happens that the meatus urinarius is always moist, that the linen in contact with it is always more or less stained, or that the discharge appears more particularly at certain periods; this may be in the morning, after slight exercise, or a repast. In some cases, it is only by pressing the urethra from behind forward, that the discharge is brought in this direction; this is the case when it is deep seated in the canal. Then it is thick, viscous, and small in quantity; being carried away from time to time by the urine, it is rarely observed at the meatus, or if here perceived, it is only in the morning, when no urine has been passed during the night. If its seat be the fossa navicularis, we may in a manner produce the discharge at pleasure; we have but to press upon the glans, which is then often very sensitive to this pressure. It is a little engorged; one or both lips of the meatus are sometimes of a violet color; and in separating the lips, the urethra appears of a violet red. If the seat of the discharge be more deeply situated, the latter may be perceived without resorting to pressure, but for this a certain quantity of the discharge is necessary. Thus the quantity, consistence, viscosity of the humor, the more or less frequent discharge of the urine, may exert an influence upon the manner in which blennorrhœa presents itself to the observer. In every case, the different positions of the penis must, more or less, favor the appearance at the meatus of the gleety discharge.

The humor may be entirely transparent and viscid, as described by Benjamin Bell, when it is supposed to be no longer contagious, it may be of grayish or milky white color; and the pus is more or less combined, or more or less separated from the mucus. The stains on the patient's linen are generally of a pale yellow color; sometimes scarcely visible; they are of a grayish white color; generally the central point is more deeply colored, the rest being very clear. Sometimes the stained linen has a sickly, sourish odor. Hunter maintained, that when the globules of pus, instead of floating in the serum, are suspended in a thready mucus, the discharge is no longer contagious. M. Baumés is less confident; according to the physician of Lyons, when the discharge is simply mucus, transparent, limpid, without color, thready, and glairy, it then less

frequently possesses contagious properties, but even with these characters, when it would seem to be deprived of all purulent globules, the discharge may still be contagious; the only difference being that contagion under these circumstances is less frequent. Blennorrhœa, in general, is not painful; the sensibility of the urethra, however, is not normal; the patient complains of itching in the canal towards the perineum, or there is a feeling of weight or vermicular sensation extending from the urethra to the rectum, which the patient refers chiefly to the latter situation. Sometimes, indeed, it is on account of this annoyance, and not for any affection of the urethra, that we are consulted. Most generally he is of the opinion that he is troubled with ascarides in the rectum. I repeat it, that in blennorrhœa there is an absence of pain, properly speaking; and when, as the result of excesses, it is present, it is felt in the vicinity of the gland, at the moment when the urine reaches the fossa navicularis, or when the last drops are voided. In such cases chronic inflammation exists in the anterior part of the canal. The same pains may exist when the urethra is inflamed at a greater depth, which is the most common seat of the lesion in cases of long standing. Then, in addition to pain, there is a frequent disposition to urinate; the urine contains more or less of deposit, and there are symptoms of inflammation of the neck of the bladder.

Diagnosis.—The diagnosis of blennorrhœa is generally not difficult. The only difficulty is in distinguishing cases in which the discharge is from those in which it is not contagious. What may most confidently be asserted is, that when the discharge is entirely mucous, free from pus, contagion is least to be apprehended; but it is a more dangerous doctrine that when the discharge is of the above character, that for a long time it could not have been contagious. It is evident that many very obstinate cases of gleet, in which the discharge is thin and milky, and sometimes even colored, in all its shades and degrees of consistence, are entirely innocent, and that females have escaped after intercourse with those affected with every kind of gleety discharge. But notwithstanding these facts, which are very numerous, exceptions have been observed, which have given rise to much domestic unhappiness. I know of two cases of contagion from gleet; the disease was considered as of no consequence, and marriage, under the circumstances, was permitted; separations were the result. One of the infected women gave birth to a child, which succumbed in three months, covered with pustules. Thus the greatest uncertainty attends our means of distinguishing a contagious from a non-contagious case of gleet, and the practitioner should always inform the patient affected with it, who consults him upon the subject of matrimony, that the disease is contagious.*

* The judicious advice here given by our author accords, we believe, with the sentiments of the majority of the most experienced British and American practitioners. We have, however, nowhere seen this *common sense* view of the subject more happily expressed, than by Mr. Skey, in his Lecture on Gonorrhœa, in the *Lond. Med. Gazette*, June 1839, p. 443. "Applications are frequently made for the purpose of ascertaining at what period of the disease it ceases to be communicable. I recommend you to be most cautious how you commit yourselves on this head, by

Prognosis.—Blennorrhœa, being in the greater number of cases a chronic urethritis, the seat of which is in the deeper portion of the canal, where the openings of the seminal canals touch the prostate gland and neck of the bladder, we can understand how, from any excitement or irritating cause, this inflammation may extend to the vesiculæ seminales, the bladder, and the prostate gland. Thus, it is not unusual to observe disturbance of the functions of the vesiculæ seminalis, such as nocturnal or diurnal emissions, the consequence of the inflammation which has been propagated from its first seat, the urethra, to the adjoining parts. More than one vesical catarrh has been caused by an aggravated blennorrhœa. Prostatic engorgements are often thus produced; a fact which is incontestable in the adult. In old men it may proceed, as is well known, from spontaneous hypertrophy, without previous inflammation of the urethra. But to maintain, as does M. Mercier, that urethritis has no connection with this hypertrophy, is more than is warranted by the facts of the case. I believe, on the contrary, that in the prostatic engorgements of old men urethritis plays an important part. If, in our inquiries into the history of the case, it is not found, it is sometimes owing to the fact that it occurred before, or at a forgetful age, or that the patient is unwilling to admit certain details. The prognosis in blennorrhœa is therefore serious, as regards the connection of a female with a man thus affected, and the health and constitution of the children which may spring from such connection, and as regards the patient who is himself diseased.

I have already alluded to the dangers of an urethritis when it becomes extensive; it is to be dreaded even when it is concentrated on a limited space; for then strictures may result from the engorgement and condensation of the sub-mucous cellular tissue.

A gleet, even when there are no apprehensions of contagion, and when it does not interfere with the functions of the genito-urinary apparatus, may exert a deplorable influence on the spirits of the patient. It seems difficult to comprehend how the appearance of a single drop of discharge, in the day, at the meatus urinarius can so affect the mind of the patient. Those who have often been consulted by persons affected with venereal disease, know the despair which is felt by certain patients, and must possess letters written by them, in terms most melancholy. Others, again, are perfectly indifferent to this disease; such are the most dangerous as regards the female sex.

Treatment.—In the treatment of this disease we should take into consideration all the causes which have been enumerated as concerned in its production. But our practice should be chiefly based upon the idea which I have constantly endeavored to keep in

which, in case of failure, you render yourselves morally responsible for whatever consequences may ensue. In truth we know nothing about it. What is communicable to one person is incommunicable to another; and so long as we have no certain evidence by which to draw the line, it is better to adopt the alternative of declining an opinion altogether, or of leaning to the side of good morals, by declaring that, so long as discharge exists, there is no exemption from the liability to communicate it."—G. C. B.

view, viz. that we have to contend with an urethritis. Every practitioner acquainted with this fact, may calculate upon success much more frequently, and much more confidently than can he who is impressed with an opposite opinion. Thus, for my own part, the basis of my treatment of blennorrhœa is identical with that of blennorrhagia. In both affections it is the urethritis which I combat. Especially do I conform to this doctrine when blennorrhagia has not been treated, or, in cases where it has been improperly treated, if antiphlogistics have not been employed in the first place, if hygienic rules have not been observed during the treatment, and if the disease has not been improved. In cases where these measures have been employed, and these rules observed, I do not insist upon the use of antiphlogistics, but resort to direct astringents, to derivations, in fine to the means which are generally used to combat a blennorrhœa, not as a symptom of inflammation, but as a disease essentially catarrhal.

This is not the place to prescribe the rules of treatment adapted to every constitution, to every diathesis. I will only remark, that when we have reason to suspect the rheumatic diathesis, a change of climate, a dry and warm residence, the vapor bath, aloetics, are calculated to produce beneficial results. It is particularly in patients of this class, that we observe cases of blennorrhœa cured by horse-back exercise, the excitement of the chase, or a voyage to a warm climate, especially where a suppressed perspiration has been made to reappear, or a new one established. If the strumous diatheses is suspected, we must resort to the preparations of iodine. In this category should be classed the patients who are cured by salt bathing, a remedy so highly extolled by Hunter. When blennorrhagia is complicated with a dartrous vice, and runs into an obstinate blennorrhœa, saline purgatives should be repeatedly employed, an irritating regimen avoided, and all diffusible stimulants, without, however, prescribing tonics properly so called. When blennorrhœa exists in a patient affected with eczema, or who has the mucous temperament of which I have spoken, I have recourse to the internal administration of ferruginous preparations: as for example, the pills of valette, or the saccharated ferruginous pills made according to my own formula. Each of these contains about one grain of the lactate of iron. At first, I give three in a day, and the patient may take as many as six or eight in a day if the stomach tolerate, and if there be not obstinate constipation.* De-

* With Mr. Skey (Lect. cit. p. 443), we are satisfied that in many cases of gleet it is necessary to raise the standard of the circulation, and nervous power, by resuming ordinary diet, and ordinary stimuli. "If," says this surgeon, "you treat a person habitually prone to large libations of drink, by entire desistence from his ordinary and necessary stimulus, he will have a protracted gleet; and this principle holds in all cases, *cæteris paribus*, in which the depletion, whether positive or negative, has been needlessly persisted in; therefore, the first consideration applies to constitutional treatment, which is, at least, equally important to local. I recently had a man under my care, who, when in health, took *per diem* about one gallon of porter, in addition to an occasional glass of gin. He had been the subject of gleet for ten months, for which he had employed the usual catalogue of local remedies. I desired him to leave the gleet to take its own course, and resume his

rivatives, such as blisters, cauteries applied at a greater or less distance from the urethra, should be preferred in cases complicated with the rheumatic or dartrous vice. Benjamin Bell greatly extols the efficacy of blisters applied to the perineum. Recently this practice has been revived, even in the acute stages of an urethritis. In blennorrhagia they can be applied along the track of the urethra, in front of the scrotum. But as they have been used in conjunction with, or immediately after certain injections, it is difficult to decide upon their agency in effecting a cure. They should always be regarded as means to be employed after others which are less painful and attended with less inconvenience. If there be reason to suppose that blennorrhœa is a primary syphilitic accident which has become protracted, or that it is a consecutive accident, the general treatment for syphilis should be pursued. Both the direct and indirect anti-blennorrhagics must necessarily be employed in the management of blennorrhœa; as for example, cubebs and copaiba. If the disease is the result of a marked blennorhagia, that is to say, one which could not be cured, either from wrong or improperly-directed treatment, then after the application of leeches to the perineum, and along the course of the antiscrotal portion of the urethra, a combination of copaiba and cubebs in the form of the electuary already mentioned, may be administered. But a blennorrhœa cannot be removed like blennorrhagia, and these means continued for a length of time in the doses specified may singularly disturb the digestive organs; in such a case the dose must be diminished, or the medicine must be for a time suspended, or turpentine substituted, of which the patient may take one drachm in the day. If the stomach is still intolerant, we must resort to injections. An immense variety of these have been employed. Here I recapitulate the formulas which I have used in blennorrhagia: sometimes I inject 5 ounces of water with 8 grains of the sulphate of zinc and acetate of lead; sometimes I employ the nitrate of silver in the strength of 2 grains to 3 ounces of water.

Injections should be more frequently repeated here than in blennorrhagia. In certain obstinate cases, we inject not only twice, or four times, but even more frequently during the day. My success in more than one case has been owing to the use of astringent injections thus repeated. I prefer, therefore, the injections of the sulphate of zinc and the acetate of lead. Sometimes I have used cold water alone. We may also employ the following formula of Benjamin Bell:

℞. Sulph Zinc, ℥ ss.
Eau. dist. ℥ viii.

usual drink. He perfectly recovered in a week, and has had no return of the discharge."

Mr. Henry I. Johnson (*op. cit.* p. 103), after alluding to the fact that gleet is often cured by the most inconsistent treatment, remarks, that after all, these cases resolve themselves into the following formula:—that gleet, being a morbid action in the part, slight in itself, but sustained by habit, *may* be cured by any thing which excites a new action, and so breaks that habit.—G. C. B.

Or this:

℞. Sulph. Alum. et Potass. grs. xv. to xxx.
Eau. dist. ℥ ii.

Vinous solutions of vegetable astringent have been much employed, according to the following formulas:

℞. Vin. (heavy red) ℥ ii.
Tannin pur. gr. i.

Vin. (heavy red), ℥ ii.
Quinquin, rub. ℥ i.

Macerate for 48 *hours.*

It has also been proposed to act by injections upon the cause, the diathesis which protracts the blennorrhœa. In supposed scrofulous cases, M. Ricord has experimented with injections of the iodide of iron (one grain to the ounce); then he has increased the strength to 18 grains to the ounce. Certain patients with a thick discharge, have been cured in four or five days. In others, these means have rekindled the acute stage; instead of a muco-purulent, there has been a discharge of bloody serum, and when the injections have been discontinued, the blennorrhœa has been removed. Other patients have been irritated, and not cured. It is very probable that these iodurated injections have acted simply as irritants, and not as specifics against a diathesis (antidiathésiques).

The mildest injections may so irritate the canal as to oblige the practitioner to suspend them for awhile, and to resume their use after an interval of some days. If the irritation should reappear, and especially if in a severe form, injection must be proscribed, or at least the formula which has excited it.

It often happens, when a preliminary treatment has been adopted, and the injection well selected, that the discharge is lessened, in which case we should continue its use until it has completely ceased. Even after this occurs, as many as ten have been employed, at intervals of from two to three days. Sometimes, without augmenting the urethral irritation, and reviving the inflammation, the first effect of the injection is to increase the discharge. Then, after four or five days use, they should be suspended. If, after this period, we observe a diminution of the *weeping*, the injections should be resumed, and it is very probable that they will be followed by complete success.

I have already remarked, that caustic injections have been employed not only in the acute stage in blennorrhagia, but in the chronic state in blennorrhœa. It then often happens that after the immediate and primary effects have passed, the gleet disappears. But be not deceived; the disease may then be only masked; there may be a dry blennorrhagia, a urethral inflammation without secretion, which, in subsiding, will reproduce its effects, which have only been postponed; for the cause being renewed, that is, the irritation of the urethra being brought back

to its first condition, it will give rise to the same discharge, with the same, if not still more obstinate characters.

I do not proscribe caustics in the treatment of urethral discharges, even where they depend upon an inflammatory condition, for analogy compels me to admit their use, and clinical observation has furnished me with facts in support of this analogy: thus, a slight cauterization of the anterior, or deeper portion of the urethra, is a rational practice; for then we act only on the part affected; in certain opthalmic inflammations, for example, we in this manner modify the condition of the conjunctiva. When the part diseased in blennorrhœa is deep seated, it is difficult to ascertain its situation so as to attack it, and it alone. Before employing the *porte caustique*, we must explore the canal with the ordinary sound, or bougie. When the instrument comes in contact with the inflamed or indurated part, the patient experiences a severe pain, and the surgeon feels an impediment to the passage of the sound; it is irregular, encounters slight obstructions, and an uneven surface. I acknowledge that this exploration is not easy; it requires long practice, but it may be attained. M. Baumés, for example, constitutes it a guide to his practice. We must not confound the sensations mentioned, those on the part of the patient and the surgeon, with those produced at the moment when the sound passes through the curve of the urethra, or when it enters the bladder, reaching too far into its cavity. When once the irregular and sensitive point is felt by the operator, its distance from the surface should be marked upon the *porte caustique*, and the latter should be introduced within the urethra. The cup containing the caustic having been protruded, it should be turned rapidly upon its axis, so that it may act upon the circumference of the canal. The caustic is then withdrawn into the sound, and the latter is immediately removed. After this trifling operation, a bath should be directed, and should be repeated at intervals of two, three, or four days, according to the effect produced.

Sometimes bougies are employed, which have been coated with an ointment more or less irritating, or sedative; thus, an ointment of the nitrate of silver (1 grain of the nitrate to 1 drachm of lard), or of camphor, may be used. Now and then I have been successful with the following:

℞. Ungt. Hydrarg., 1 part.
Ext. Bellad. 2 parts.

Occasionally the mercurial ointment, or the mercurial cerate, is relied upon alone. The naked bougie has also been employed; in this case, it acts as a physical agent, modifying the sensibility of the urethra, and *tanning*, as it were, the mucous membrane, and thus changing its mode of secretion. Sometimes I have adopted this practice with the greatest advantage; this was especially the case in two instances, where the patients in the higher ranks of society suffered so much from mental despondency as to consider life as a burden. I generally use the yellow wax bougie. Blis-

ters to the perineum, and the use of bougies, were regarded by Benjamin Bell as our most efficacious means of treatment. This practitioner insists upon the employment, and prescribes rules for the use, of the bougie. According to him, we should select very soft bougies, which will slightly stimulate the parts, without exciting an inflammation; they are often extremely useful, not only in thus stimulating the weakened parts, but supporting them by their volume and their form; they are attended with less risk than injections, even when they stimulate beyond our expectations, for the inflammation thus excited is always accompanied by a temporary discharge, which is well adapted to prevent any unpleasant consequences, which might otherwise result from their use. The bougie should be as large as the capacity of the urethra will admit. Benjamin Bell maintains that it is particularly essential in this variety of discharge, that the bougie should be of a large size, for it is chiefly from the volume of the instrument that success in these cases is attained. We generally ascertain, in the course of a few days, whether the bougies are likely or not to be useful; nevertheless, we should not expect any lasting advantage unless their use be for a long time continued. In cases of long standing, they must be employed for ten or twelve weeks, and they should not be discontinued until the cure is complete. It is well, however, to observe, that when we have pursued this method of treatment for a reasonable length of time, it should occasionally be suspended in order to ascertain its effects. When bougies are daily introduced, it is impossible to decide whether the discharge proceeds from disease, or from the irritation excited by the instruments; a bougie cannot remain for a length of time in the urethra even of a sound person, without being covered, when it is withdrawn, with pus or muco-purulent matter.

It is better to use the bougies three or four times in the day, and not to leave them in the urethra more than ten or fifteen minutes. Sometimes, the discharge is not only increased by these instruments, but a true blennorrhagia is produced, especially when they are allowed to remain in the canal; in such a case, their use should be suspended; particularly, if they have given rise to frequent disposition to urinate, or to symptoms denoting an inflammation of the neck of the bladder. When the inflammation has been subdued, we should notice whether the discharge has completely ceased. If it has not, we may resort to them again, though cautiously. Particularly should we guard against passing the instrument too deeply, a practice of which patients and young practitioners are often guilty.

A gleet which has resisted every kind of treatment, occasionally disappears in an unknown manner: sexual intercourse has produced this effect. Finally, there are some cases which resist everything, even time, and which, after having been symptomatic of a form of inflammation of the urethra, are found at length to be maintained by strictures, disease of the prostate or bladder, or they are complicated with seminal emissions. The treatment, then, should be modified according to the complications of the case.

STRICTURE.

As we are at present concerned with stricture only as one of the consequences of blennorrhagia, we shall not dwell upon other points in its etiology. Frequently there exists but a single stricture, though we occasionally meet with more; thus, M. Lallemand refers to the case of a captain Foltz, who had seven; Collot* met with eight, and John Hunter† six, in a single patient. As the latter surgeons were deprived of our present means of exploration, we may reasonably doubt the accuracy of their diagnosis. No autopsy has ever revealed a large number of strictures in a single subject. Yet, it is well established, that in many cases, more than one exists. M. Leroy d'Etiolles asserts that in nearly one-half of those examined, two strictures are found, within about three lines of each other.

Seat.—Differences of opinion have prevailed in reference to the seat of strictures. This has arisen from the different estimates formed of the length of the urethra, the result of different modes of measuring this canal. As a general rule, it may be stated, that the most common seat, is at the various points of projection of the canal, or in the vicinity of these projections, as for example, at the seat of junction of the bulbous and membranous portions of the urethra, and particularly at the commencement of the latter portion; again, we find stricture occurring at the union of the latter with the prostatic portion, and lastly, at the navicular fossa and meatus. They may exist at any of the intermediate points. Sœmmering denies the existence of stricture in the prostatic portion of the urethra; Hunter does not dispute such an occurrence, but remarks that it has never come under his observation. Prof. Lallemand is opposed to the views of Sœmmering. Of 14 cases reported in the work of the former surgeon, allusion is made to strictures situated at the depth of six inches or more from the meatus; now, the average length of the urethra being from five inches four lines to seven inches three lines, we are compelled to admit the existence in these cases, of strictures in the prostatic portion of the canal.

[The measurement of the urethra, as made by the following surgeons, twenty in number, gives an average of $7\frac{1}{10}$ to $9\frac{1}{2}$ inches instead of $5\frac{1}{3}$ inches to $7\frac{1}{4}$, as stated by our author.

	In.		In.		In.		In.
Amussat,	7	to	8	Lallemand,	$7\frac{1}{2}$	to	$9\frac{1}{2}$
Boyer,	10	"	12	Lisfranc,	9	"	10
Begin,	$7\frac{1}{2}$	"	$9\frac{1}{2}$	Meckel,			8
Belmas,	10	"	12	Malgaigne,	$5\frac{1}{2}$	"	$5\frac{3}{4}$
Cloquet, I.	$7\frac{1}{2}$	"	11	Mercier,	"	"	"
Cloquet, H.	9	"	11	Perréve,	6	"	10
Civiale,	5	"	7	Sabatier,	10	"	12
Ducamp,	$7\frac{1}{2}$	"	$9\frac{1}{2}$	Segalas,	8	"	9
Guthrie,	8	"	11	Velpeau,	5	"	7
Gross,	7	"	12	Whately,	$7\frac{1}{2}$	"	$9\frac{1}{2}$

Mr. Miller states in his *Practical Surgery*, (London ed., p. 519,) that the ordinary site of stricture is between six and seven inches

* *Traité de l'operation de la taille et des Suppressions d'urine*, 1762.
† *Traité des Maladies vénériennes*, with Notes by M. Ricord.

from the orifice, in front of the membranous portion of the urethra, which, with the estimates given above of the length of this canal, is far more liberal than that of our author. Indeed, according to the calculation of the latter, Mr. Miller would make the prostatic portion of the urethra the ordinary seat of stricture! That this portion of the canal is *sometimes* the seat of true stricture, is positively asserted by M. Ricord, (*Notes to Hunter*, 2d ed., p. 217,) in proof of which he refers to the case reported and delineated by Mr. Crosse, to which, he observes, many others might be added. Doubtless it does occur, though *rarely*, at this point.—G. C. B.]

The most common seat of stricture is a little in front of the junction of the membranous with the bulbous portion of the urethra. The following results were obtained by Ducamp by means of his graduated instrument: In 5 out of 10 cases, the stricture was encountered in from three and a half to four and a half inches, and to be more precise, in 4 out of 5 cases it is from four inches ten lines to five inches seven lines, from the meatus. It is evident that this would bring it in the vicinity of the urethral curve, which, with the exception of the meatus, is the narrowest portion of the urethra. At the meatus, strictures are not uncommon: I have seen them produced by chancres, which had destroyed the frenum, or spent their ravages on the summit of the glans. Should the destruction by these ulcers have been more complete, so as to destroy a portion of the penis, stricture occurs at the point where the urethra may have been divided. The meatus has likewise a tendency to become obliterated, when chancre produces a perforation of the inferior wall of the urethra at the navicular fossa, by which a kind of hypospadias is formed.

Form.—A stricture occasionally presents the appearance of a slightly-projecting line, over which the *mucous membrane* seems only to have lost its elasticity and transparency; sometimes, on the contrary, the thickening of the parts is considerable; all the tissues which enter into the formation of the urethra become involved, thus producing a decided tendency to its obliteration.

The extent of a stricture may greatly differ, being from that of the thinnest fold of the mucous membrane, to one and a half inches (Lallemand, sixth case); ten to fourteen lines (Segalas), and one inch, nine lines; or two inches, eight lines (Hunter, Chopart and Charles Bell.)

The longest strictures are generally found at the spongy portion of the urethra. Sometimes they are of considerable thickness, their dimensions in other respects being not very extensive. In such cases a stricture may be mistaken for a fold, a valve, or some morbid growth.

This disposition is particularly frequent at the commencement of the urethra, in the vicinity of the glans; its direction is likewise more perpendicular to the axis of the canal. A case is reported in the *Gazette Medicale*, 1840, in which a valve existed in the urethra, its free margin being directed towards the bladder, thus causing an obstruction to the passage of the urine. The patient

was sixteen years of age, and this growth was supposed to be congenital. A stricture, which involves but a portion of the circumference of the urethra, may be situated on its upper, lower, or lateral walls. The latter interfere less with the evacuation of the urine, because the opposite point being sound, is easily dilated; this variety is also most liable to exist a long time undetected, for it does not, except when excessively developed, oppose the introduction of the catheter. No instances of a perfectly longitudinal stricture have yet been discovered.

M. Amussat maintains that the urethra is never perfectly obliterated; he asserts that a communication always exists between the parts anterior and posterior to the obstruction. Any interruption to this communication, is, in his opinion, but temporary, and is caused by some foreign body.

It was doubtless through inadvertence that Richerand asserted, that of 10 cases of retention of urine, 8 are due to an *obliteration* of the urethra.* The truth is, that these *obliterations* have frequently been supposed to exist, when they were absent, or only caused by accidental circumstances; but cases have occurred which prove the possibility and actual occurrence of impermeable strictures. I admit, that the plates of Sir Charles Bell are overdrawn, but the case mentioned by Chopart† is conclusive, and accords perfectly with the dissection made by M. Delmas on a subject named Juniot, who died at the *Hôtel Dieu*, from an extensive infiltration of urine.‡ On this subject, the reader may likewise consult the case reported by M. Monod, and referred to by Cruveilhier in his great work, and which is also noticed in the *Annales de Chirurgie*, 1842. I believe, that the obliteration did not take place until a fistula was established, through which the stream of urine was diverted.

[Mr. Liston once boasted that he had never been foiled in introducing a catheter *with one hand*, and it was not until some two or three years before his death that he encountered a case at the North London Hospital, which baffled him, and caused "the cold sweat to start in big drops from his forehead," (vide *Lizars, on Strictures of the Urethra*, pp. 18, 19.) Mr. Wm. Cadge, the pupil and friend of Mr. L., informs us in the *Lond. Med. Times*, Nov. 9th, 1850, that this distinguished surgeon, in the latter years of his life, abandoned his former opinion, that there are really no impermeable strictures. Mr. Syme, as is well known, still adheres to this opinion. In the very excellent *Memoir on the Treatment of Stricture of the Urethra*, &c., by Prof. Eve, of Nashville, (*Nashville Journal of Medicine and Surgery*, June 1853, p. 332,) this able surgeon has reported a case in which, with all his well-known skill, he could not pass the stricture. After making an incision into the perineum, he "drilled a hole through a hard cartilaginous mass occupying the membranous portion of the urethra." In a note, Prof. E. refers to another case, treated by Dr. Webb, of St.

* *Nos. Chirurg.* tom. iii. p. 470.
† *Traité des Maladies des voies urinaires*, tom. ii. p. 323.
‡ *These inaugurale*, of M. Selles, 1824. Also Sœmmering, p. 174.

Louis. In this instance, Dr. W., after opening the perineum, could not find the urethra; he then cut out a cartilaginous mass an inch in length, around which he supposed the urine must have passed. Prof. Eve, in view of the above facts, very pertinently asks, "would not this have proved an impermeable stricture, even to Mr. Syme, of Edinburgh," and, we would add, to M. Amussat himself? *Impermeable* strictures are distinctly recognized in the *Treatises on the Urinary Organs*, both of M. Civiale and Prof. Gross. —G. C. B.]

Structure.—A knowledge of the structure of a stricture is absolutely essential to a just appreciation of the means proposed for its treatment. Laënnec, in his lectures, speaks of bridles formed of plastic lymph deposited upon the lining membrane of the urethra. The existence of this kind of stricture is denied on the grounds, 1st, of the slight tendency of mucous membranes to form plastic lymph; 2, the impossibility of the condensation of this lymph, owing to the frequent passage of the urine, by which it must necessarily be removed. But one well-authenticated case is sufficient to destroy the force of these objections. Admit that the mucous membranes do not often secrete this lymph, still instances have occurred both in the intestinal canal and the laryngeal and bronchial tubes. Urine is not constantly passing through the urethra; the interval of the acts is sometimes sufficiently long, to permit the condensation of a layer of plastic lymph, which process is often very rapid.

Laënnec deposited in the Museum of the Faculté de Medecine, a pathological specimen, in proof of his opinion: this I have not been able to procure. Besides, the preparation is now so old that one could not decide whether the stricture in this case was formed by a deposit of plastic lymph, or a thickening of the mucous membrane itself. The views of Laënnec were admitted by Ducamp, and similar opinions were entertained by Morgagni, Sharp, Goulard, and other surgeons; but further investigations on this question are to be desired.

[This question has been definitely settled by the researches of that able surgeon, Mr. Hancock, of the Charing Cross Hospital, London. His recently-published work, "*On the Anat. and Phys. of the Male Urethra, and the Pathology of Strictures of that Canal*," contains more valuable practical information than we have ever seen embodied in so small a compass. We shall have occasion to refer to this work again in noticing the subject of spasmodic stricture. In speaking of the influence of adventitious membranes in the production of stricture, (p. 74,) he remarks, that he is convinced that the latter depends upon the former more frequently than is commonly supposed: "To gain as much information as possible upon this point, I have examined all the urethras I could get. I have examined the urethras of those who have died of other diseases, in whom the existence of stricture had not been suspected; I have also, through the kindness of my friends, been enabled to examine preparations taken from those who had at one time suffered from this malady, and who were supposed to

have been cured; I have also been enabled to examine those taken from patients who have died whilst laboring under the complaint. And the result of these examinations is the conviction that permanent stricture from false membrane within the canal upon its free surface, is a common and frequent occurrence: and I am confirmed in this view by my friend Dr. Beith, who has rendered me great assistance, and who from his position at Greenwich Hospital, has had ample opportunity of studying these diseases, to which he has devoted much attention." At pages 75–78, Mr. Hancock has detailed some of the autopsies which he has made, and which prove incontestably the accuracy of his opinion. —G. C. B.]

In the majority of cases, the mucous membrane seems the only part affected; its redness, consistence, and thickness are increased, and its elasticity impaired. When, at an autopsy, this lesion only is observed, we are surprised that it could have caused so serious an obstruction to the passage of the urine; but we forget the congested state of the subjacent tissues which subsides after death, nor do we take into consideration the fact that this obstacle may have been increased by spasm. This is the most common form of stricture; that through which, it may be remarked, the largest bougies are most readily passed. It should be remembered that the tissues subjacent to the mucous membrane are increased in thickness only by the temporary presence of a large quantity of blood, which is only temporary, being withdrawn at death, or which may be expelled by well-managed external compression. Occasionally the mucous membrane is sound, and the subjacent tissues are alone affected. This does not imply that the former has not been diseased; for it is to be supposed that it was primarily affected, the effects having here subsided, as in the case of certain alterations in the pyloric and cardiac orifices of the stomach, when these parts suffer from organic lesions. In proportion as the inflammation assumes the chronic form it becomes more profound, and the mucous membrane regains its natural aspect, whilst the subjacent tissues, especially the cellular, becomes indurated and hypertrophied.

Samuel Cooper was wrong in asserting, that when the mucous membrane is the seat of stricture, its color is whiter than natural: for the contrary is often the case, especially during the earlier stages of the disease. In my opinion, sufficient attention has not been paid to the morbid alterations in the tissues subjacent to the urethral mucous membrane. On this subject I beg the reader's indulgence, for its investigation may lead to important modifications in the preventive treatment of strictures. The hypertrophy of the subjacent tissues is a fact well established, but it is produced in various ways: sometimes, it would seem that a deposit of plastic lymph had taken place in all the tissues of the part; whilst, in other cases, these parts seem to be thickened only. These are the strictures to which the term fibrous has been applied. Cruveilhier believed that they are all of this nature. On this point the reader may consult the *Annales de Chirurgie*, t. iv. p. 129.

However this may be, there is a projection into the canal as well as externally; by pressing the urethra a decided induration may be felt. This variety of stricture is ordinarily of considerable length, and is most commonly found at the spongy portion of the urethra. To this category belongs the case reported by M. Lallemand, in which he speaks of a stricture of considerable extent, produced by the lesion of the walls of the urethra, and even of the tissues of the corpus cavernosum. After the death of the patient, on exposing the canal longitudinally, the indurated tissues presented the aspect of a gun barrel split in its longest direction. A cartilaginous hardness has been spoken of in these cases. Sometimes the length of these strictures is not considerable; they then form a band which surrounds the urethra, protruding both within and without the canal. There are good grounds for believing that this kind of stricture is frequently the result of an abuse of cauterization.

Nodosities form in the substance of the cavernous bodies, and diminish the calibre of the urethral canal, though the latter may not be directly affected; sometimes they do not in the least encroach upon the urethra, but project externally.*

Instead of becoming dilated and thickened, the cells of the submucous tissues may contract and even become effaced. We then have, necessarily, a diminution of the calibre of the canal, and the formation of a contracted circular stricture as if caused by a ligature; this is the variety to which, in my opinion, the term *stricture atrophy* should be applied. It is met with most frequently at the bend of the urethra. It should be borne in mind, that inflammation, after having invaded the tissues, does not always leave them in the same condition; not unfrequently these tissues seem to enjoy a new vigor and activity; but the contrary may happen, and hence the atrophy, and the development of that form of stricture to which we have referred. It is not, besides, the only instance in pathology where opposite effects are due to the same cause.

We must likewise take into consideration the effect of the abscesses in the sub-mucous tissues which occur, either during or after a severe attack of blennorrhagia. Since my connection with the *Hôpital du Midi*, I have found these very common in young girls. Now when these abscesses heal, a bridle or depression remains.

Ulcerations of the urethra which were once regarded as the sole cause of strictures, have since been denied a place in their etiology. But modern researches have shown that they are only less frequent than was formerly supposed, their existence having been clearly established. M. de Selles observes in the Thesis already quoted, that Dupuytren during his lectures, exhibited several examples of urethral ulcerations. Some of these were superficial, others deep seated, and appeared as if cut out with a punch. They were

* Roche, Sanson and Lenoir, *Nouv. élém. de Path. Medico-Chirurgicale*, 4th ed. tom. iv. p. 596.

generally confined to a single point of the canal, in some instances, however, they occupied its whole circumference. Around and beneath these ulcerations, the mucous membrane was engorged and thickened. These characters were particularly noticed in the cases mentioned in a note which I have received from my freind Dr. Goyraud, of Aix.

It is obvious that the cicatrization of these ulcers must diminish the natural calibre of the canal, and the bridles formed resemble the cicatrices of burns. To this category belongs the stricture produced by cauterization either with caustics in a solid or diluted state.

Vegetations, which by the ancients were called carnosities, are by no means so common as they supposed, a fact first established by the investigations of Brunner and Méry, and afterwards by those of Benevoli, Marini, Garengeot, Morgagni, Lafaye, Desault, and the more careful observations of modern surgeons. But Girtanner was wrong in asserting that these carnosities have but an imaginary existence, for they were observed by Morgagni, Hunter, Ch. Bell, Dupuytren, and Baillie. I myself have met with them, and M. Mercier has reported a remarkable case. I have twice seen them on the cadaver; they are generally seated near the fossa navicularis. Wigelin and Lobstein have observed them behind the verumontanum. These, in my opinion, were cases of hypertrophy of the prostate or tumors of this gland. On this subject Sœmmering remarks: "The carnosities which I have observed in the *lacunæ* were of a violet color, hard, of the size and form of a lentil; they adhered by a kind of pedicle to the urethral mucous membrane; it is an easy matter to ligate or excise them when they are not of too large size."* It is evident that Sœmmering here refers to vegetations in the vicinity of the meatus. "But," he adds, "since these vegetations have been found to exist at both extremities of the urethra, why may they not occur at its middle portion?" He, however, never met with an instance of the kind: though the testimony of John Hunter, Benjamin Bell, André, and especially of Baillie, is sufficient to establish the fact of their existence. More recently, together with M. Mercier, I have seen small vegetations along the whole course of the male urethra. I have also met with an instance where the urethra was rough throughout; it was that of a prostitute, who was under my care at the *Hôpital du Midi*. These vegetations were of a whitish color, soft, and bled from the most trifling cause. With the aid of a catheter, and a finger introduced into the vagina, I detected their existence throughout the urethra. This girl was of a decidedly lymphatic temperament, and had no other symptoms of syphilitic disease; these vegetations were reproduced with a wonderful facility. Those situated most externally, I attacked with narrow-bladed scissors; the others were cauterized with the nitrate of silver, which was introduced to a great depth. Van Swieten refers in his Commentaries† to vegetations developed at the orifice of the urethra;

* *Traité des maladies de la vessie et de l'urêtre.* Translated by M. Hollard, p. 167.
† Vol. v., p. 453.

these are not uncommon. It would appear that cancerous vegetations may exist in the urethra. M. Lallemand has reported an example. But such an occurrence is exceedingly rare in the female, especially as a primary accident. Cancer of the uterus may extend so as to invade the vagina and even the urinary apparatus.

Nature.—The remarks which we have made upon the causes and pathological anatomy of stricture render any extensive observations upon their nature unnecessary. Thus, in the etiology, particular notice was given to wounds and inflammations. Both of these causes frequently lead to the same final result, viz. the fibrous condition of the parts. Thus, the cicatrix of a wound, and the condensation of the sub-mucous tissue arising from a protracted urethritis, produce the same anatomical changes, the fibrous or true stricture. As already stated, the inflammatory stricture is but the commencement of the fibrous, and it may also exist as a complication of the latter variety.

Is there a spasmodic stricture? There is nothing in the structure of the urethra, abounding as it does in erectile tissue, and surrounded as it is by muscular fibres, to forbid such an existence. Wilson's muscle alone may produce a constriction of the commencement of the membranous portion of the urethra. Spasmodic stricture, however, rarely exists alone, it is generally but a complication. In some cases, stricture would appear to be, at the same time, spasmodic, inflammatory, and organic. Suppose, for example, a chronic condensation at some point of the walls of the urethra, at which its natural calibre is diminished; yet, the bladder retaining its contractile power, the urine is freely evacuated. Now, let the subject of this stricture indulge in excesses, either at the table or venery, the obstacle to the passage of urine is soon increased; its strain, which before was scarcely distorted, is now arrested; but a bath, and the abstraction of blood, suffices to relieve the patient. It is evident, that the difficulty in this case arises from inflammatory congestion, and not from any permanent alteration in structure. The same patient is greatly excited by some accident; he has retention of urine at once; but it soon disappears, after some trifling remedy, or after his mind is restored to its accustomed tranquillity. We find, therefore, in the same subject, three kinds of stricture; at least, such is the case with those who admit this number, but it is obvious that but two of these are permanent, the spasmodic being but a complication of the other varieties. For the anatomical grounds on which this opinion is based, the reader may consult the well-written article of M. Gosselin, in the *Archives de Medécine et Annales de la Chirurgie.*

[The muscularity of the urethra, a doctrine advocated by John Hunter, Sir Everard Home, Bauer, Wilson, Howship and Samuel Cooper, is, at length, positively established by the more modern researches of Messrs. Quekett and Hancock, of London,* and Köl-

* *Op. cit.*

liker, of Würtzburgh.* But, it is to Mr. Hancock that we are especially indebted for pointing out the practical bearings of the results of these investigations. It is now clearly demonstrated, that, as the urethra is muscular throughout its whole extent, spasmodic contractions may occur, independently, in any part of the canal, as well within an inch of the orifice of the urethra as at its membranous portion. Indeed, it was a case of the former, Mr. H. observes, that first led him to examine the minute structure of the parts microscopically. We cannot too strongly recommend the work of the latter gentleman, to those desirous of becoming acquainted with the true pathology of strictures.—G. C. B.]

Symptoms.—The stream of urine is diminished in size, length, and force; its course is altered, particularly in cases of lateral stricture; its form is flattened like the blade of a penknife, or spiral and twisted like a gimlet, frequently it is bifurcated, or *forked*, to use the language of Ambrose Paré;† in some cases, one of these *forked* streams projects beyond the rest, which fall upon the patient's feet, or are scattered in all directions; in these cases, it appears as if they issued from four or five small orifices in the glans, which seem as if perforated like the spout of a water-pot. Generally, in the normal state, the jet gradually diminishes in proportion as the bladder becomes emptied, and the curve which it describes is effaced, but in the case of stricture, this curve is, as it were, broken, and the stream is suddenly arrested. The bladder is not completely evacuated; the desire to urinate is soon again urgent and irresistible; however, a long time is required to empty even a portion of the contents of the bladder. It may be stated, that the patient urinates longer and more frequently than natural, and yet the bladder is never empty. A certain quantity remains behind the stricture, which oozes in drops immediately after the patient has finished, as he supposes, the act. Mental emotions, and changes of temperature, modify the extent of the resistance opposed to the passage of the urine. The retention of the urine in the bladder leads to an alteration in its composition. It becomes more ammoniacal, less aqueous; turbid, and sometimes a grayish deposit takes place; it may be mixed with blood, pus, semen, and a glairy tenacious mucus, which, according to Sir Everard Home, indicates a lesion of the prostate gland. The emission of semen is obstructed, as well as of the urine. The slightest stricture interferes with its discharge, and it escapes after the erection has subsided. Sometimes the semen, instead of reaching the glans, takes a retrograde course towards the bladder. Instead of a retention, we may have an incontinence of semen. Nocturnal pollutions are common in patients affected with strictures. The semen escapes, also, during a semi-erection, or during the act of defecation, without the consciousness of the patient; but sometimes he experiences severe pain after an emission, as if a needle were thrust into the perineum. This occurs particularly

* *Mikroskopische Anatomie, &c.*
† *Œuvres Complètes.* Paris, 1840. Vol. ii., p. 565.

where the stricture is seated in the prostatic portion of the urethra. M. Dezemeris was present at the autopsy of a young man who had suffered from repeated nocturnal pollutions; in this case, ulcerations existed at the orifices of the seminal ducts.

Besides the urine and sperm, the urethra gives exit to the liquor prostaticus. This fluid is sometimes secreted in abundance, particularly where the gland is irritated by the presence of a stricture in its vicinity; but its emission is prevented only by very extensive stricture; then it is carried away with the urine, or falls back into the bladder. With a stricture, there almost always exists a gleety discharge, more or less copious. This discharge generally proceeds from a point of the urethra, immediately behind the stricture, and is observed more especially in the morning. In some instances, instead of being muco-purulent, this fluid is of a serous character, and is more or less limpid. When the stricture is of great extent, this matter, like the semen, is carried into the bladder, to pass off only with the urine; in the latter we now find a deposit. When the stricture is of long standing, and when there is reason to believe that it is extensive, if we do not find this discharge from the meatus, we may suspect that it escapes from the other extremity of the urethra, or has accumulated in a pouch formed behind the obstruction. The lining membrane of the pouch in these cases assumes a villous aspect, and is preternaturally reddened and thickened; for it is constantly irritated, either by this prostatic fluid, or by the urine, which no longer remains in its natural reservoir.

[In patients disposed to the formation of calcareous matter, the latter is apt to accumulate in the pouches or dilatations which form behind the seat of obstruction. A few years since, we removed a large stone from the membranous portion of the urethra, the obstacle to the passage of urine in this case having been caused by a congenital narrowing of the meatus, which, indeed, was nearly obliterated.—G. C. B.]

Whatever may be the seat of the stricture, whenever pain is felt it is generally in the vicinity of the meatus; however, when this pain is sympathetic, it indicates some lesion near the neck of the bladder. It is then also felt in the perineum, about the anus and rectum, or there is a more or less uncomfortable sensation of weight in these regions, especially when the prostate gland is affected. If the stricture be seated in front of the bulb, pain is felt along the scrotum and penis; the projection formed by the obstruction may be readily felt, particularly when it is caused by indurated nuclei in the cellular tissue of the urethra, corpus spongiosum, or corpora cavernosa. These pains extend towards the testicles and the hypogastric region, following the course of the ureters and the vasa deferentia, whence they are reflected to the glands from which they started.

The efforts made by the patient to expel the urine affect the intestinal canal; fæces are passed involuntarily; the inner coat of the rectum becomes prolapsed; the small intestines, with certain other abdominal viscera, are displaced, and at length we find disorder

of the organs of circulation. Fever is established, and this is often of an intermittent type. This arises from the more or less extensive irritation of the urinary organs, but more especially from the greater or less absorption of urine, which occurs whenever its evacuation is prevented, or it may occur from an inflammation of the veins surrounding the neck of the bladder.

Innervation is often seriously modified by the existence of a stricture, particularly when it is of long standing. The patient becomes exceedingly irascible, is constantly exaggerating his dangers, and not unfrequently becomes a complete hypochondriac.

Nothing can exceed the sufferings which the patient, in some of the graver forms of stricture, experiences. There is strangury and complete retention of urine. Desperate efforts are made to void the urine, he becomes agitated and is seized with despair; his face is flushed; his eyes protrude; he cries aloud for aid; he seizes a chair or a table; stamps his feet; he squats, for he is in constant apprehension that the fæces will escape, and escape they do. At this crisis hernia may form, hemoptysis occur, or pulmonary emphysema be produced. The spectacle is heartrending; but unutterable is the joy of the patient at the moment of his deliverance. His gratitude is expressed in glowing terms.

Diagnosis.—This is not always easy, though of the highest importance in a practical point of view. Notwithstanding the numerous researches that have been made, and the ingenious methods devised for the purpose, the diagnosis is sometimes difficult. Occasionally, as already stated, a stricture exists and the patient remains ignorant of the fact, in consequence of the little suffering to which it gives rise. (Desault, Lallemand). When the stricture is seated beyond the bulb no tumor can be felt along the urethra; the stream of urine is not materially altered; and the patient's attention is directed solely to the constant gleety discharge. In some instances this discharge ceases for a time, and it is only long afterwards, when age has enfeebled the bladder, or when the stricture itself has become more extensive, that the jet of urine is so modified as to leave no doubts as to the existence of an obstruction in the urethra. But a retention of urine may arise from other causes; as for example, a foreign body without, or within the bladder, an enlarged prostate, a tumor in the vicinity, &c., &c. It is easy to distinguish these tumors from true stricture. An enlarged prostate may have nearly the same antecedents as a stricture, but the former most generally occurs in persons upwards of fifty years of age, and is not often accompanied with a discharge, whilst the latter is seldom absent in stricture. Again, in the case of an enlarged prostate, with the aid of a finger passed into the rectum, even a large catheter may almost always be introduced, and the enlargement of the gland be thus detected. In the case of stricture some resistance is felt at first, then a gentle shock against the instrument indicates that an obstacle has been encountered. But we must be careful not to confound the kind of valve near the bulb with a true stricture, for it frequently gives rise to the same sensation as the latter. There are several other points in the urethra at which an

instrument may be arrested, unless great care be taken to follow the natural axis of the canal, but by withdrawing the instrument a little, depressing its handle gently, and delicate manipulations of this kind, the obstacle, depending upon this cause, may generally be surmounted. Wax bougies are almost exclusively used by M. Civiale, both for the purpose of obtaining an impression of the form of a stricture, and as an agent of dilatation. Should the stricture be complicated with inflammation, this instrument may be firmly held at some point of the urethra anterior to the stricture, and during its detention become so softened and distorted as to render it useless for the objects intended. Ducamp was also accustomed, before proceeding to cauterization, to introduce a wax bougie, peculiarly modified, for the same purpose, and he boasted that, from the knowledge thus obtained, of the form, extent, and other conditions of the stricture, he could treat it with the same precision as if it were fully exposed to view. Sir Charles Bell proposed the use of metallic bougies, with a bulbous extremity, but their inflexible nature rendered their introduction sometimes painful. M. Leroy d'Etiolles, to remove this objection to their use, recommended that they should be made of gum elastic. These bougies have an olive-shaped extremity, more or less elongated, by which their introduction, in some cases, is much facilitated.

[Profs. Syme and Gross attach but little value to the impressions obtained by the wax bougies. The former denounces it as a "preposterous" procedure, and says that it can result only in the deception either of the practitioner or patient. Mr. Guthrie considers that, for examining the urethra, a conical solid silver sound is the best instrument (*op. cit.* p. 69). It should be of a size, he observes, not more than *two-thirds* of that of the meatus. Mr. Miller (*Practical Surgery*, p. 522,) states that a metallic instrument is quite capable of fulfilling all ordinary indications in this way. Sir Benjamin Brodie asserts that the best instrument for diagnosis is the plaster bougie "of *full* size, and large enough to fill the urethra" (*op. cit.*, p. 23). He objects to the use of conical bougies, which he thinks are liable to extend forcibly the orifice of the urethra, and to excite inflammation. Prof. Gross recommends a common silver catheter, of *moderate* size, and a little conical at its extremity. Almost every surgeon has his peculiar mode of exploring the seat of a stricture, and doubtless, in *his* hands, it is the best. No matter what the method adopted, in some cases an accurate diagnosis is impossible.—G. C. B.]

Treatment.—We must never lose sight of the fact, that inflammation is not only the most common cause, but may be one of the complications of stricture. This knowledge will lead us to be gentle in our manipulations, and to resort at once to the use of antiphlogistics, whenever the latter may be indicated. In some instances, they may obviate the necessity of resorting to the operations commonly employed in the treatment of strictures, all of which may be comprised under the heads of dilatation, cauterization, and incision.

Dilatation.—This is generally attempted by means of bougies.

The time during which they are permitted to remain, varies with different practitioners. Thus, until recently, this period varied from two to fifteen hours. The interval of their use also differs. With some, this may be three days, with others they are used every day. With MM. Civiale and Pasquier, I prefer to leave them in the urethra not longer than five minutes, and to prolong the sitting at the same time, gradually increasing the size of the instrument. This may be called temporary, gradual dilatation. But more recently, mention has been made, on the authority of M. Lallemand,* of a rapid dilatation. M. Pirondi, who has ably described and advocated this method, has not been guilty of the exaggerations of M. A. T. Chretien,† who proposes *sudden, forced* dilatation. The enormities of M. Mayer, in my opinion, can find but few imitators. His principle, that *the narrower the orifice of the stricture, the larger should be the instrument employed*, must disgust every sensible mind. His bougies consist of six in number, varying from two to four and a half lines in diameter. When the instrument has reached the seat of stricture, he hesitates not to press with force: various movements are given to the instrument, as from left to right, from before backwards, and in a spiral direction.

[For all the objections to this method, we must refer the reader to our author's *Traité de Pathologie Externe*, &c., 3d ed., vol. V., pp. 111, 116.—G. C. B.]

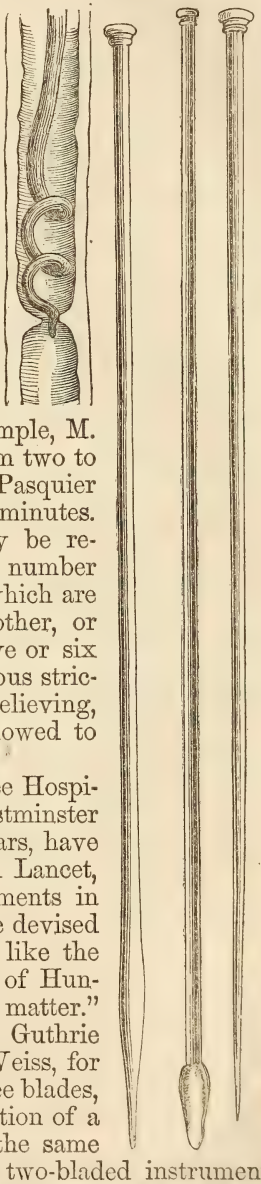
My treatment is based upon the following principles: gradual and gentle dilatation, at first with conical wax bougies, like those so successfully employed by M. Civiale; in recent cases, and where the stricture is not of a fibrous character, I rest satisfied with these means. Afterwards, I may substitute for the wax, gum elastic bougies, but in all cases they are used gently, and suffered to remain but for a short time in the urethra.

[Prof. Gross states that he is satisfied from ample experience that the very best instrument for dilating a stricture is the common silver catheter, with a slightly conical point. "I have employed this instrument now in the treatment of this affection for upwards of twenty years, and nothing could induce me to abandon it. It possesses all the requisites that such an instrument ought to have, viz., lightness, firmness, and durability, and is incomparably superior, in every respect, to all the metallic, wax, gum-elastic, ivory, and other bougies, that have ever been invented. . . . My desire is merely to recommend, in strong and decided terms, an instrument which is capable, as a general rule, of fulfilling every indication presented in this disease, even in its worst forms, and which, I am satisfied, is much less appreciated than it deserves to be." Mr. Fergusson gives the preference to the bougie, and generally employs the plated steel rod, or a silver tube. Mr. Syme asserts that the best instruments for dilatation are made hollow, of Berlin silver, which possesses the requisite degree of rigidity,

* *Gazette Medicale*, 1835.
† *Bulletin Thérapeutique*, tom. xvi. p. 288.

takes a fine polish, and is not liable to rust. (*On Strictures of the Urethra*, p. 44.) Sir Benjamin Brodie (*op. cit.* p. 33,) uses the common plaster bougie, as well as those made of solid silver. He likewise, in some cases, employs the gum catheter, which he allows to remain day and night. This induces suppuration in the urethra, after which a large-sized instrument may be introduced. The wax bougie is liable to bend upon itself, as represented in Fig. 1st. Fig. 2d, Porte Empreinte, an exploring instrument. Figs. 3 and 4, conical and fusiform bougies.—G. C. B.]

Figs. 1, 2, 3, 4.



I have already stated, that an instantaneous dilatation has been highly extolled, and it is proposed to banish the practice of permitting sounds or bougies to remain in the canal.* MM. Civiale, Leroy, A. Pasquier, approve of this method, without, however, excluding others. For example, M. Civiale permits the bougie to remain from two to three minutes to half an hour; whilst M. Pasquier never allows it to remain more than five minutes. It is evident, that certain strictures may be removed by the employment of a certain number of bougies, gradually increasing in size, which are introduced and withdrawn one after another, or which may be permitted to remain for five or six minutes; but, in my opinion, certain fibrous strictures can never be cured in this manner, believing, as I do, that the dilating agent must be allowed to remain for a longer period in the urethra.

[Mr. Thomas Wakeley, of the Royal Free Hospital, and Mr. Bernard Holt, of the Westminster Hospital, London, within the last three years, have published numerous cases in the London Lancet, illustrating the efficacy of certain instruments in the treatment of stricture, which they have devised and employed, and the object of which, like the method of M. Béniqué, is, in the language of Hunter, to act "like a wedge upon inanimate matter." Indeed, more than thirty years ago, Mr. Guthrie had a dilating instrument made by Mr. Weiss, for this purpose. At first, this consisted of three blades, which were gradually separated by the action of a screw which turned in the handle, but the same mechanism was afterwards applied to a two-bladed instrument. (*Guthrie on Urinary Organs, Am. Ed.* 1845, p. 76.) At page 77, he observes: "I thought I had now obtained an instrument which

* Vide the last article of M. Béniqué.

could not fail of fulfilling all my expectations, and was only disappointed by finding that it did too much. The opportunity of dilating was in general too tempting to be resisted, and the consequence was, that it produced irritation in so many cases, that I was forced to give it up, having also fully satisfied myself that dilatation, to whatever extent it might be carried, could not cure the worst kinds of stricture." After noticing the dilating instrument of Mr. Arnott, consisting of softer materials, and which is dilated by means of air or water, he adds, p. 78: "I do not now use instruments of this kind, either from their often failing, or being so troublesome, whilst they place the surgeon too much in the hands of the instrument maker, unless he has time and ingenuity to make them himself, and they are after all unequal to effect a cure in the more aggravated cases of disease." At page 96, Mr. G. states that he gives the preference to a pliable hollow gum elastic bougie, of a medium size, perfectly smooth, and tolerably round at the point, so as to give as little uneasiness as possible.

The method of M. Béniqué, to which our author has referred, is regarded by Messrs. Ricord and Acton as "pretty," but they observe that the idea emanated rather "from a mathematician than a practical man." (Acton, *op. cit.* p. 99.) However true the latter observation may be, as applied to M. Béniqué, this method has recently been most highly lauded by one of our own countrymen, who is both *a mathematician and a practical man.* We refer to the very able paper of Prof. Eve, to which we have already alluded.* This paper concludes with the following propositions:

1. "That while dilatation is the proper treatment for stricture of the urethra, *this* has hitherto failed to effect a cure, because in the ordinary mode of applying it, *the seat of the disease has not been specially acted upon by the dilating instrument.*

2. "To cure stricture, the *orifice* of the urethra must be so enlarged that the *canal beyond it may be dilated to its original size,* which we ought to recollect is about *twice* that of the opening leading to it. Instead, therefore, of being satisfied with introducing bougies of *two lines in diameter* through a restricted portion, they should measure *four to five lines* in thickness.

3. "*There is no necessity to confine a patient to bed* in treating stricture; once an instrument has been introduced, it has done all it can to expand the passage and should be withdrawn, that others larger in size may be immediately substituted. While this process ought to be cautiously and very gradually conducted; still the more rapidly and freely it can be applied, provided no pain is excited, the sooner the disease will be removed.

4. "By this method strictures may be *permanently cured in a few days, without suffering, inconvenience or exposure, to serious consequences.*"

The box of M. Béniqué consists of thirty-six pewter bougies, in diameter from one and one-third to five lines, cylindrical, of the ordinary curve, and flexible. From two or three to seven or eight

* *On Treatment of Stricture of the Urethra by rapid and free Dilatation, &c., &c.*

may be introduced at each sitting, which if no irritation be developed, may be daily repeated. If necessary to pass the large size, the orifice of the urethra may be enlarged with the knife.

The trials yet made with these instruments, are not sufficiently numerous, we fear, to justify the unqualified praise of Prof. Eve. He has been able to furnish but two cases from his own experience, which he is compelled to admit are defective, especially in regard to time, and in one of these, certainly a desperate one, dilatation was successful, only after the employment of the knife. Even after the external incision in the case, *nineteen* days were required to pass a bougie measuring one-fourth of an inch in diameter. Prof. E. remarks, that when this patient returned home, so sceptical were his friends as to the relief he had experienced, that they required ocular demonstration, "whereupon he, in true Western hyperbolical language, offered to aid any water-wheel deficient in power, if they would only let him mount a fence!"

Perhaps subsequent experiments, on a more extended scale, may prove that these instruments, as well as those recommended by Messrs. Wakeley and Holt, like the contrivances of Mr. Guthrie, are capable of "*doing too much.*" Mr. Wakeley's experience, thus far, however, has been highly encouraging. In the dilatation of the female urethra, the vulcanized India-rubber apparatus of Mr. R. E. Hodges, may be used, for a description of which, together with those of Messrs. Wakeley and Holt, we would refer the reader to the excellent work of Mr. Fergusson on Practical Surgery (*Am. Ed.*), where may also be found some judicious observations upon the methods of treatment to which we have here alluded.—G. C. B.]

Cauterization.—Surgeons of the XVth, XVIth, and XVIIth centuries, among whom may be named A. Feri, A. Paré, Loyseau, and F. de Hilden, resorted to cauterization to remove urethral obstructions, which they supposed to be caused by vegetations, fungous growths, and *carnosities* within the canal. Hunter was the next whose name stands conspicuous in connection with this mode of treatment. In 1822, Ducamp (*Traité des retentions d'urine*) stamped upon it a character of certainty that caused it to take precedence over all other methods in the treatment of stricture. There are two kinds of cauterization, the lateral, and the direct or antero-posterior.

Lateral Cauterization.—This may be done with the *porte-caustique* of Ducamp, or of M. Lallemand. The modification of the latter instrument, however, as made by M. Segalas, by which the advantages of Ducamp's and that of M. Lallemand are combined, is preferable to either.

Antero-posterior Cauterization.—For this purpose, Ambrose Paré employed *coated* bougies; Hunter, a *porte-caustique* stylet, which was introduced through a canula; Everard Home, an armed bougie. M. Leroy d'Etiolles has brought the instrument of Hunter to perfection. It now consists of a gum-elastic tube, with a fixed curve, at the extremities of which are two ferrules, the external of silver, the vesical of platina. An obturator closes the orifice of

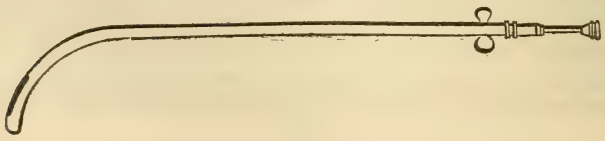
the tube, while it is passed towards the seat of stricture. As soon as this is felt the obturator is withdrawn, and a rod substituted, of which the vesical end is charged with caustic, the latter, nitrate of silver, being contained in a platina cup. Instead of the nitrate of silver, we may use the Vienna paste. The urethra should be cleansed of all mucosities before the caustic is applied.

One word in reference to the comparative advantages of dilatation and cauterization. The advantages and inconveniences of both have been mutually exaggerated by their respective advocates. Thus, it has been urged, that by dilating a stricture we do not destroy it, on which account it is of course liable to return. Cauterization, carried to a certain point, does, indeed, effect its destruction; but it cannot insure us against a relapse, and, in the opinion of some surgeons, this will assume a graver form, an inodular cicatrix is in fact produced, endowed with considerable retractile power, which property may aggravate the condition of the patient. The application of caustic requires extreme accuracy in the diagnosis of stricture, both as to number, seat, extent, direction, &c. Now this is impossible in practice, therefore with caustic we must always operate in the dark, as is the case in the operations of incision and scarification, to which we shall soon refer. The caustic or point of the cutting instrument may be thrust into sound parts, by which, instead of benefiting we injure the patient. M. Lallemand and his disciples rely exclusively upon cauterization, rejecting dilatation altogether, a course which, in my opinion, is attended with serious objections.

The question is different if by cauterization, it is proposed merely to modify the vital action of the parts. The slightest contact is then sufficient, and of course, this *superficial* cauterization must be free from the risk of that which is more profound, as must be frequently practised by M. Lallemand and his followers. There are cases, on the other hand, when the smallest sized bougie cannot be passed, though the patient may, after desperate efforts, succeed in voiding his urine. Again, there are case where neither a bougie nor the urine can pass, then direct, or the antero-posterior cauterization may be followed with the happiest results; for this purpose the instrument of M. Leroy is admirably adapted.

[Prof. Gross notices an objection to the instrument of M. Lallemand, which is certainly of a serious character. He states that from the manner in which the cup is joined to the rod, it is liable to be broken; and he refers to the instance of a physician in Buffalo, who was in the habit of cauterizing himself with this instrument, and in which this accident proved fatal. (*Treatise*, p. 642.) To obviate this risk, Prof. G. now employs the instrument represented in Fig. 5; which he says is all that can be desired. It

Fig. 5.



resembles a common silver catheter, straight or curved, according to the situation of the stricture. At its vesical extremity is an eyelet three-quarters of an inch in length and two lines in width, corresponding with the cup containing caustic, which is attached to a rod. The cup is partially filled with tallow, soap, or extract of hyosciamus, and this is sprinkled with a thin layer of the powdered salt, a much better plan, he asserts, than that of melting the caustic over a lamp.

"To this method and this instrument," he observes, "am I indebted for two of the most perfect cures I ever effected. I should not be surprised if cauterization should again become a favorite mode of treatment."

For a favorable notice of this method the reader may consult the *Practical Observations on Strictures,* &c., by Mr. Robert Wade, (London, 1853, pp. 79, 181.) See, also, the *Treatise* of Prof. Gross.—G. C. B.]

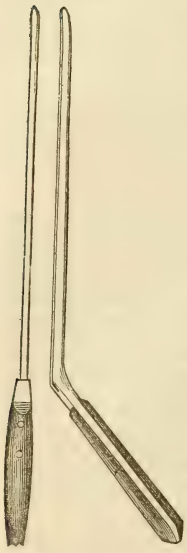
Incision.—Resection.—A variety of sheath-bladed instruments have been recommended by MM. Ricord, Guillon, Leroy, Amussat, Stafford, and others, for the internal division of strictures, but this method of treatment is liable to the same objections as that by cauterization. It must, however, be admitted, that in cases of valvular growths near the meatus, and in the prostatic portion of the urethra, it may be advantageously employed. Should complete retention of urine occur we must then resort to the button-hole incision, (*boutonnière*), or puncture of the bladder.

[Sir Benjamin Brodie has given the particulars of a very bad case, (*op. cit.* p. 41,) in which he resorted to a modification of Mr. Stafford's operation. In this case, a plaster bougie having been passed down to the seat of the obstruction, an opening was made in the perineum. The bougie was then withdrawn and an instrument introduced in its place, which consisted of a straight silver tube, closed at its extremity, except a narrow slit, through which a small lancet could be made to project by pressing on a stilet which projected from the handle of the instrument. "The round extremities of the instrument being pressed against the anterior part of the stricture, the lancet was protruded and the stricture divided." The advantages of this proceeding, he adds, consists in the fact that the free opening in the perineum prevents all danger from infiltration of urine; and the application of the finger to the posterior surface of the stricture serves as a guide for the lancet, by which we can make an exact division of the stricture. Mr. Guthrie, referring to Mr. Stafford's instrument, (*op. cit.* p. 92,) says, "it must always be a two-edged tool, capable of doing much good and much mischief." We have often seen M. Civiale perform the internal division of stricture with the happiest effects, and if proper care be taken we are satisfied this operation will not often be productive of ill consequences.—G. C. B.]

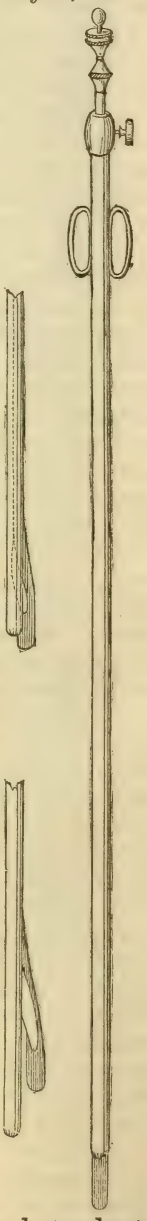
Button-hole Incision (*Boutonnière*).—A staff or catheter having been passed as far as the seat of stricture, is held by an assistant. The surgeon makes an incision along the raphé, and seeks for the membranous portion of the urethra; by freely incising its inferior wall, he reaches the staff which the assistant withdraws a little.

Whilst searching for the continuation of the canal he directs the patient to urinate. A grooved staff or stilet is then introduced into the urethra, which serves as a guide in prolonging the incision beyond the seat of stricture. A catheter is then introduced, which is allowed to remain, and the edges of the wound are brought together.

Fig. 6.



Figs. 7, 8.



[Mr. Fergusson says that he has been much pleased with the instrument represented in Fig. 6, in treating slight strictures within an inch or two of the glans, or even deeper than an ordinary bistoury can reach. Figs. 7 and 8 is an ingenious instrument, manufactured by Tiemann, combining blades both for the lateral and antero-posterior incisions. Fig. 7 represent for lateral incision, Fig. 8 for antero-posterior.—G. C. B.]

In my opinion, this operation is not justly appreciated. Its difficulties and dangers have been exaggerated, and I believe that it will become more general in proportion as surgeons become better acquainted with the anatomy of the parts, for then, if the staff fail to reach the point at which we propose to operate, we shall know where to find it. In such a case a knowledge of anatomy is our best guide. The stricture, in these cases, is almost always seated at the commencement of the membranous portion, and this is the point where the opening should be made; now, it is not very difficult to find the bulb of the urethra, nor to follow the course of the raphé, as in the incision for lithotomy. Guided by anatomy alone, the surgeon cuts down upon an artery,—why should he not, in the same manner, cut for the membranous portion of the urethra, the position of which is far less liable to change than that of an artery? If the morbid alterations of the part have produced such a change it is an advantage to the operator, for this alteration is a dilatation, which renders this part of the canal more easy to be found and opened. There can be no comparison between the dangers of this operation and that of forced catheterism, or puncture of the bladder. It is limited to the perineum, remote from the deeper fascia, and consequently from the peritoneum. Strictly speaking, it does not affect the pelvic cavity, but only its walls. This operation places the male urethra in a condition similar to that of the female: the catheter has but a short distance to pass to reach the bladder, and if the prostate gland be

not affected, this is readily accomplished. A staff, sound, or bougie, may also be passed through the stricture from behind forwards, to meet another introduced at the meatus. In the majority of cases, these instruments may be brought into contact, and may afford as valuable information as to the extent and the thickness of the stricture, as well as of other matters required to guide us in our treatment.

[In 1849, Mr. Syme of Edinburgh, published a work on strictures of the urethra, &c., in which he attempts to prove (p. 58) that:

1st. "The division of a stricture by external incision, is sufficient for the complete remedy of the disease, in its most inveterate and obstinate form.

2d. "That, in cases of less obstinacy, but still requiring the frequent use of bougies, division is preferable to dilatation, as affording relief more speedily, permanently, and safely."

Mr. Syme claims as the peculiarity of his operation, that instead of simply passing a staff, sound, or catheter down to the seat of stricture, a grooved staff is passed through the stricture before the incision is attempted, there being, in his opinion, no such thing as an impermeable stricture (p. 57). Of course, where this can be done, the operation must be greatly facilitated and rendered more free from danger. Thus performed, he states, it is "completely effectual." From the cases reported in the volume to which we have referred (p. 13), it would appear that Mr. Syme performed his first operation about the year 1838. Since that period, we believe that he has operated in upwards of sixty cases without a fatal result. He asserts that, if "correctly performed," the operation is perfectly safe. Now, fatal cases have occurred to Messrs. Bransby Cooper, Cock, Gay, Coulson, Mackenzie, and Fergusson. These deaths occurred from phlebitis, hemorrhage, urinary infiltration, &c., &c. In other instances, patients have had a very narrow escape. Now, we think that few will be disposed to attribute the fatal results which occurred in the practice of the above-named surgeons to their inability to perform the operation "correctly." There can be no question, that even in the most skilful hands, it is not devoid of danger. The suffering, which the patients have long endured, on whom this operation is performed as a *dernier* resort, doubtless increases its hazards. If surgeons would resort to it at an earlier period of the disease, instead of aggravating the condition of the patient, by fruitless efforts at dilatation, where dilatation is impossible, we believe that the operation would prevent much distress, and, in many cases, prepare the patient for a radical cure by the very means which were before ineffectual. Mr. Fergusson recommends that it should not be practised indiscriminately; and as he speaks impartially, and from experience, we cordially commend the remarks on this subject in the last edition of his Practical Surgery, to those who propose to perform the operation. Professor Mussey informs us that, in a case in which he not long since resorted to it, he was much pleased with the results.

In the text, our author has spoken of the simplicity and safety of the old operation—the button-hole incision, in cases of impermeable stricture. Mr. Fergusson states, in his *Practical Surgery*, that he has had two fatal cases in his own practice from this proceeding, and Sir Benjamin Brodie (*On Urinary Organs*, 2d Am. ed., p. 40), alluding to an operation performed by himself, which consisted in laying open the whole of the contracted portion of the urethra, speaks of the *difficulties* connected with these operations; and the testimony of Professor Gross, who performed it some thirteen years ago (*op. cit.*), is to the same effect. The operation to which we now refer for impermeable stricture, and which has been performed and recommended by Collot, Petit, Wiseman, Bertrandi, Arnott, Shaw, Desault, Hunter, Cooper, and others, seems to have been almost universally mistaken for that claimed by Professor Syme, the peculiarity of which, as already stated, consists in cutting down upon a small grooved staff passed through the stricture. For a more complete account of the present state of the question, see Report of the proceedings of the Royal Medical and Chirurgical Society, April, 1853, in the *American Journal of the Medical Sciences*, July, 1853, p. 226. M. Ricord, in noticing Mr. Syme's operation (*Notes to Hunter,* 2d ed., p. 259), merely states, that the cases reported would seem encouraging, but M. Civiale, as we were personally assured by him, never resorts to it; the old operation, however, he informed us, he frequently performs. The Irish surgeons are decidedly opposed to it. During our recent visit to Dublin, Mr. Porter, the president of the College of Surgeons, declared to us, that he would venture to assert that it never had been performed in that city, and that it never would be!—G. C. B.

[*Urinary Abscesses.—Infiltration of Urine.*—Under the head of blennorrhagia our author briefly referred to peri-urethral abscesses, which form during the existence of that disease. Among the consequences of stricture, we have likewise to note the development of abscesses, produced by the constant distention and irritation of the parts behind the seat of obstruction. In obstinate cases the continual straining of the patient is very likely to terminate in this manner. Ulceration may likewise ensue, and the urine be gradually infiltrated into the adjacent loose cellular tissue. It forces its way slowly in some instances, in consequence of the adhesive inflammation which its presence excites; in other cases, from a rupture of the urethra, a sudden and extensive infiltration may take place, which shall result in the sloughing of portions of the urethra, or the entire canal, together with the glans penis and scrotum. The peculiar arrangement of the perineal fasciae, causes the direction of the effused urine to vary according to its seat. Fig. 9 shows the tumefaction of the scrotum and perineum from infiltration of urine. If it occur in the membranous portion it passes under the sheath of the levator ani, laying bare the rectum; if at the bulbous portion, it encroaches upon the deep-seated fascia of the perineum, and is arrested in its course opposite the anus, from which point it may extend so as to involve the circumference of the penis, the scrotum escaping entirely, (Malgaigne.) It may

FIG 9.

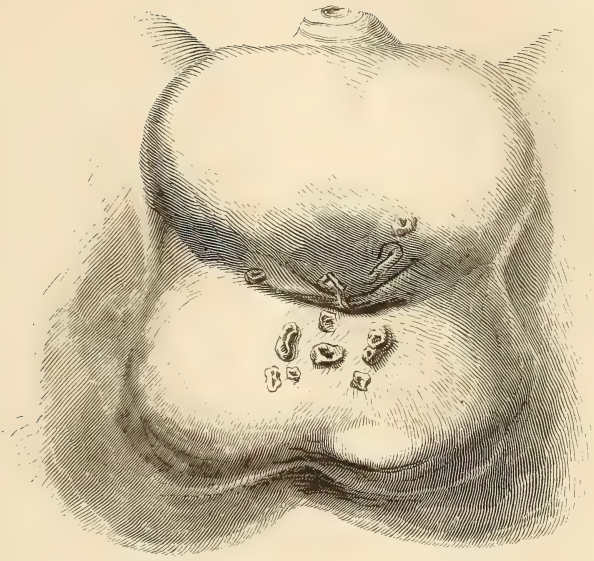
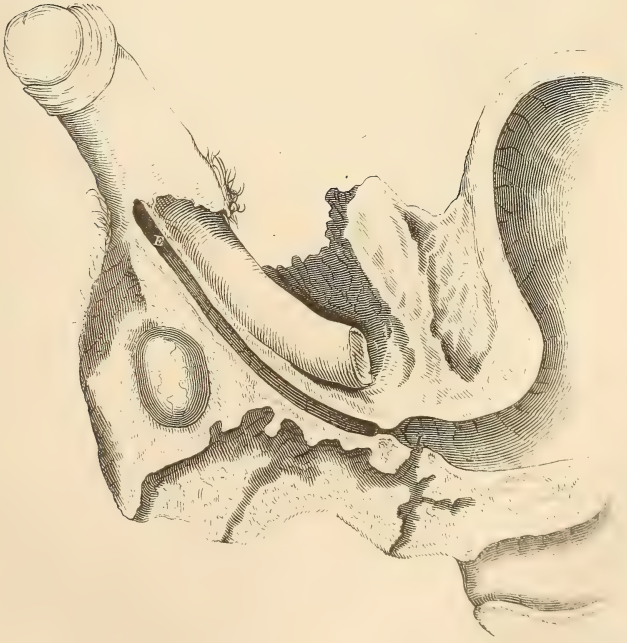


FIG. 10.



also reach towards the groin and abdomen, infiltrating the cellular texture of all the coverings of these parts. Mr. Shaw, in his Notes to the work of Sir Charles Bell, on Diseases of the Urethra, (3d Lond. ed., p. 244,) has related an extraordinary example of the extent of the infiltration and suppuration which sometimes occurs. In this case there was sloughing not only of the coverings of the penis and scrotum, but of the loins and abdomen, as far as the umbilicus, and in a downward direction as far as the knee, and yet this patient finally recovered! At page 267, Sir Charles Bell has reported a case which proved fatal from delay; the swelling was on the left side of the pubes, and was mistaken for a hernia. When the urine is effused into the corpus spongiosum, and limited to this body, the penis may assume a semi-erect appearance, as in the case described by Mr. Earle, in the Lond. Med. Gazette, vol. ix. p. 736. In the same journal, p. 213, he relates a case where the urethra gave way about an inch from the external orifice; the under surface became enormously swollen, and a pouch or kind of second bladder was formed, which it was necessary to empty whenever the bladder was evacuated. It will be seen in Fig. 10, (from Sir Charles Bell,) that notwithstanding the numerous external fistulous openings, there is but one communicating directly with the urethra.

Treatment.—When no communication exists between the abscess and the urethra it must be opened in the same manner as when seated near the rectum. If confined behind the deep-seated fascia the only indication of its existence may be a slight degree of fulness and deep-seated hardness in the perineum. The matter having been reached by the point of the bistoury, the opening may be enlarged by directing the instrument downwards and outwards, as in the operation for lithotomy. In many of these cases no time is to be lost; a free exit must be given to the matter or the most serious consequences may follow. The fistulous openings resulting from these abscesses, of course, can be cured only after the stricture has been removed. When extensive sloughing of the parts covering the urethra has taken place, and the granulating process is insufficient for their reparation, recourse must be had to plastic surgery, on which subject the works of Mr. Earle, Sir Astley Cooper, Delpech, Dieffenbach, and Messrs. Ricord and Jobert may be consulted. The latter surgeon in particular has devoted especial attention to these operations, and in his splendid volume on Plastic Surgery the practitioner may find every desirable information.—G. C. B.]

URETHRORRHAGIA.

Symptoms.—Nothing is more common than the discharge of a small quantity of blood by the urethra. It is not, strictly speaking, an accident, but only a symptom, which I have noticed under the head of urethritis. Sometimes, however, it happens that the quantity discharged is sufficient to constitute a true accident, a hemorrhage. Thus we occasionally find that the blood flows in a full stream, unmixed with urine or with a muco-purulent matter,

and without any effort to urinate on the part of the patient. This hemorrhage may last for an hour, and weaken the patient to a surprising extent. Generally the discharge is not so abundant, and it is rare that a glass of blood is lost. In every instance the patient experiences relief, or a temporary improvement after this discharge. Severe cases occur in paroxysms, which are sometimes excited by a walk, by imprudence, and occasionally occur without any evident cause, even while the patient remains in the horizontal position and is submitting to anti-hemorrhagic treatment. If the hemorrhage be considerable, and often repeated, the relief of which I have spoken, is followed by syncopes and a prostration of strength which scarcely permits the patient to raise his eyelid.

Causes.—Attempts have been made to establish the etiology of urethrorrhagia. Among the causes assigned are severe inflammation, wounds, rupture of certain vessels, a hemorrhagic diathesis, and finally, a change in the mode of action of the cause which ordinarily gives rise to blennorrhagia. I believe that the etiology of this affection may be regarded under all these aspects, and we should not be exclusive in our views. Thus it is evident, that in very severe cases of blennorrhagia, with the muco-purulent matter, mingled or separate, some drops of blood may be discharged which have oozed from the inflamed surfaces. There is a manifest solution of continuity in the vessels in cases of rupture of the *cord* by a blow of the fist, by coïtus or masturbation, which certain individuals practice during a blennorrhagia even when most severe, either to gratify their passions or to cure the disease. In these cases the hemorrhage may be very abundant; it is of a bright red color and jets like arterial blood. These are the instances in which the discharge is followed by so much relief; it also hastens the subsidence of the inflammatory symptoms; but it is the harbinger of troublesome days to the patient, for at the point where the urethra was ruptured, an inodular stricture, the worst of all strictures, may after awhile be formed. I am not aware that an urethrorrhagia, the result of an hemorrhagic diathesis, has been really observed, but such a case is not impossible. An instance of which has come under my own notice, and of which M. de Castelneau has published the details in the *Annales de la syphilis et des maladies de la peau*, would seem to belong to this category; but the patient had suffered only from some trifling attacks of nasal hemorrhage, and there was nothing either in the antecedents or in what followed, to prove the existence of this diathesis. In this case the hemorrhage occurred in paroxysms, which sometimes lasted for an hour. After each attack the patient was so debilitated that he could not raise his arm. This example of an urethrorrhagia so grave in character, I believe to be unique. There was this remarkable fact in connection with it, that during its continuance, as well as the intervals between these attacks, the muco-purulent discharge was suppressed, and it did not return until the urethrorrhagia was completely cured. It was for this reason that M. de Castelneau conceived the idea of a change in the *modus operandi* of the cause; as it sometimes produced a blennorrhagia, sometimes urethrorrhagia. This hypothesis,

which has been ably sustained by M. de Castelneau, is, however, after all *but an hypothesis.*

Diagnosis.—Hemorrhage from the urethra may be easily distinguished from that of the bladder. In the first case, the blood is not mixed with urine, and flows spontaneously; in the other, it is at the moment of, or immediately after micturition that it appears, and is always more or less mingled with urine. Very often, when a blennorrhagia is severe and deep seated, involving the neck of the bladder, with the last drops of urine may be noticed a clot of blood. In these cases the patient experiences severe pain when the stream of urine is voided, and vesical tenesmus. Sometimes the blood comes both from the urethra and the bladder; we see, indeed, as has been already mentioned, patients discharging blood mingled with muco-purulent matter, in the intervals of micturition, as well as during the act.

Prognosis.—Urethrorrhagia is not serious in itself, but it generally indicates the existence of an intense urethritis, and may give rise to unpleasant consequences, especially if there be a rupture at any point in the urethra.

[Mr. South states, in his edition of Chelius (vol. i. p. 178, Am. ed.), that he once saw an instance of enormous extravasation of blood, from the rupture of some vessel in the penis during the act of coition; the penis and perineum were greatly distended, there was a severe pain in voiding urine, the evacuation of which required the use of the catheter. In the course of two or three days extravasation of urine ensued, and the bladder was punctured through the rectum. Sloughing in the perineum and groins occurred, and the patient had a very tedious recovery.—G. C. B.]

Life is not compromised by the loss of blood alone, and, in the most severe cases, the treatment consists simply in repose, and a milk whey diet, which suffices to arrest the hemorrhage. In the case already mentioned, after the hemorrhage had ceased, the appetite was keen, and the patient soon begged to be discharged from the hospital.

Treatment.—This should be based on the cause of the hemorrhage, and the quantity of blood lost. Generally, repose, diet, slightly acidulated or demulcent drinks, are sufficient to arrest the discharge, when it arises from excessive inflammation or a rupture of the urethra. If the patient be young, plethoric, and the urethritis subacute, to repose I add blood-letting, or what is better, the application of fifteen or twenty leeches to the perineum. Some practitioners, with Hunter, have employed copaiba. I have no faith in its efficacy, and am of the opinion that, in certain cases, this medicine might produce an injurious effect, by irritating the neck of the bladder, and thus, to the hemorrhage from the urethra, add a bloody discharge from the bladder, which is an unfortunate complication.

When the quantity of blood lost threatens the life of the patient, the remedies to be first employed, are refrigerants along the urethra, the scrotum, and the perineum. Sometimes alone they do not suffice to arrest the discharge; in such a case, Benjamin

Bell recommends compression of the urethra: it may be made from without inwards, or *vice versâ*, or in both directions at the same time. We may, indeed, by seizing the antiscrotal portion of the urethra between two fingers, employ compression sufficiently long to arrest the hemorrhage, or with a truss we may compress the urethra in the perineum. The compression in front of the scrotum may be effected by the application of little bands surrounding and compressing the whole penis. Should this be judged insufficient, we may resort to the use of bougies, or sounds which are to be introduced into the urethra; if of large size, they may of themselves arrest the hemorrhage. If in spite of these means it continues, we join to the excentric, concentric compression; we apply narrow bands circularly around the penis, or the perineal truss, according to the depth from which the blood proceeds. But, I must declare, that I have never had occasion to resort to these mechanical means. I repeat, therefore, that in the great majority of cases, repose and soothing applications are still the best and the most speedily effectual means. Further, in making the two kinds of compression mentioned, we may often obtain a contrary effect to that which is desired. It is well understood, that when we have to treat a hemorrhage from rupture of the urethra, after its cessation, and that of the urethritis, with which it is complicated, we must dilate the urethra with bougies, in order to prevent the formation of strictures.

URETHRAL PAINS.

Symptoms.—All the symptoms of blennorrhagia may disappear, with the exception of the pain: this not only continues, but may become exasperated, and constitute the only disease. It may be seated in any part of the urethra which has been inflamed, from the fossa navicularis to the neck of the bladder, but more frequently it is situated in the vicinity of the glans. This pain is sometimes of a shooting character; it is constant, though occasionally exacerbated, and puts on the form of neuralgia; it may be, though rarely, intermittent, and the attacks occur at irregular intervals. The actual severity of the pain can be generally but little known to the practitioner, for this accident occurs chiefly in nervous subjects, who are sometimes more or less hypochondriacal, and who always exaggerate their sufferings. Occasionally the pain is reflected from the bladder towards the anus and the rectum, and there is a feeling of weight in the testicles.

Causes.—It is evident that urethral pain is more likely to be observed as one of the consequences of a blennorrhagia which has been imperfectly or improperly treated.

A neglect of hygiene is also an actual cause of this accident. Very excitable nervous subjects are those who suffer most from blennhorrhagia; but it must be acknowledged that, in certain cases, neither age, nor temperament, nor the intensity of the inflammation, nor a neglect of hygiene, nor errors in treatment, can

be accused. I have treated a patient who has been strict in his observance of hygienic rules, very precise in submitting to methodical treatment, and who was not of the nervous temperament: he suffered equally from urethral pains after the cessation of the discharge, and this pain resisted every plan of treatment.

Treatment.—For a long period, antispasmodics, narcotics, and blisters have been employed. John Hunter highly extolled the latter remedy, which he applied to the perineum. To these have been added, cold injections of opium and perineal frictions with a *pommade* of laudanum. Hunter speaks of injection, of a slightly irritating character, which are to be employed from time to time; thus, we may use eight grains of corrosive sublimate to eight ounces of water. When these injections have produced a good effect, it has been but temporary. Bougies have also been employed, as well as sounds smeared with some particular ointment, or caustic. Thus, by the introduction of a large yellow wax bougie, I have sometimes diminished the irritability of the urethra. The bougie as it were toughens the mucous membrane of the urethra; it seems to act like the bit in the mouth of the horse, of the presence of which after awhile the mouth becomes unconscious. By means of the bougie belladonna ointment has been introduced. Finally, the urethra has been cauterized after the method and with the instrument of Lallemand.

I have seen all these methods fail in the most skillful hands, and in cases which have been permanently cured by very simple means, viz. compression of the penis.

Author's Treatment.—Compression.—I have observed that patients suffering from urethral pains, either as the result of blennorrhagia, or from certain morbid conditions of the neck of the bladder, often compress the penis with their fingers, and they have declared that in this way they obtain true relief. Again, I had observed, as have other surgeons, that calculous patients compress the glans, that they stretch the penis, and thus strive to ease their anguish. From this I conceived the idea of employing constant compression. This I effect by the methodical application round the penis of little bands of diachylon plaster, as follows: each little band should not be more than 4 lines in width: its length should be sufficient to encircle the penis, so as to permit the ends to lap each other under the urethra. The dressing is thus rendered more solid, and the urethral compression more certain. The bands should overlap each other, the second covering a third of the first, and so on with the rest. The compression should be very decided, but not carried to an extent sufficient to prevent the patient from urinating. These bands should be allowed to remain as long as possible, until the pains have ceased at least for three days. We should not fail to renew them, as they may become deranged, and fail to effect the object for which they were applied. This method of treatment is chiefly successful when the pain does not extend beyond the limits of the antiscrotal portion of the urethra. When it is seated in the perineum, there is less chance of causing it to disappear. In such cases, it sometimes becomes permanent; generally it happens that

it is only moderated, but occasionally it entirely disappears. We may know in advance, if compression will succeed, by making the patient attempt it with his fingers; if a momentary relief is experienced, we have strong grounds for anticipating complete success.

I should remark, in conclusion, that the pain may be caused by the remnants of an inflammation, in which case, leeching will be preferable to compression. In the *Annales de la syphilis et des maladies de la peau*, moreover, may be found facts recorded, which favor the practice here recommended.*

PERVERTED SENSATIONS IN THE URETHRA.—ABSENCE OF SENSATIONS.

Symptoms.—Instead of an exaltation of sensibility in the urethra which amounts to a pain, certain aberrations of this sensibility may be manifested as the result of blennorrhagia, which Benjamin Bell and M. Lagneau have denominated *extraordinary sensations of the urethra.* These sensations are also referred to the bladder, and in some instances to the testicles. Thus, after the cure of a blennorrhagia and the cessation of the true accidents of this disease, there sometimes remains a modification of the normal sensibility of certain parts of the genito-urinary apparatus. According to M. Lagneau, it is a continual titillation, a pricking sensation of the urethra, the vesiculæ seminales, the neck and even the body of the bladder. There is also a kind of undulatory movement of the testicles (Benjamin Bell). Sometimes the symptoms resemble those of stone in the bladder. These abnormal sensations are occasionally felt not only in the genital, but in the pubic and hypogastric regions, and upper part of the thighs; sometimes the stomach itself, and the intestines become involved. It is not improbable that in certain cases, these morbid feelings proceed from the stomach, particularly in hypochondriacal patients.

Instead of an increased or perverted sensibility, it may be completely wanting at some point of the urethra. Thus, after certain cases of blennorrhagia, there may be an entire absence of the voluptuous feeling, which coincides with the ejaculation of semen. What is quite remarkable is, that the patient may indulge in sexual intercourse as usual, and the erections may be complete, but the ejaculatory act is unattended by the least pleasure, and the completion of coition is only made known by the cessation of the erection.

[We have recently been consulted in relation to a case of this kind. If the patient indulge in a second connection shortly after the first, the ejaculatory act is then accompanied with a slight sensation of pleasure.—G. C. B.]

This condition has been observed without any appreciable lesion of the urethra, as well as with an indurated and thickened state of the walls of this canal. M. de Castelneau has published an interesting case which belongs to this last variety. The patient

* T. ii. p. 135.

was cured by the application of leeches to the perineum, another fact corroborating the views which I have always professed, and which have guided my practice since I have been connected with so vast a theatre of observation.

Attempts have been made to cure these abnormal sensations by means of yellow wax bougies, blisters to the perineum, hypogastrium, and the internal surface of the thighs. Success has by no means always followed this mode of treatment.

Causes.—Females are sometimes, though very rarely, affected with these perverted sensations, and when they do occur, it is generally owing to the fact, that there still remains a certain degree of irritation in the neck of the uterus, from the extension of the blennorrhagia to this organ. In such cases, there are most frequently venal and vesical difficulties, together with tenesmus, which greatly annoy the patient. These abnormal sensations occur in both sexes, after every form of blennorrhagia, the mild and the severe, after attacks supposed to be syphilitic, as well as those which have been regarded as simply catarrhal. M. Lagneau is said to have observed these cases in men who have had what has been called a *dry* blennorrhagia.

Patients who have suffered from these perverted sensations, firmly believe that the disease has been but imperfectly treated; they are impressed with the idea, that a syphilitic virus still lurks in their system, and they dread its effects; they incessantly demand to be radically treated, and especially by mercury or some other powerful remedy.

Treatment.—There can be no doubt that antispasmodics and narcotics, used either internally or applied to the surface of the perineum, together with very small doses of the pil. hydrarg. to satisfy the imagination, sometimes produce beneficial effects. But still more frequently antiphlogistics are indicated; for instead of a simply nervous state, there is, in reality, an urethral inflammation with sympathetic phenomena. Therefore, these abnormal sensations, either of the urethra, testicles, or other parts of the genital sphere, cannot be made to disappear, until this inflammation has been removed. I still repeat what I have stated in speaking of blennorrhœa: those who regard these morbid phenomena as the effects of a more or less protracted inflammation of the urethra (and, I will here add, of the prostate), will meet with greatest success in their treatment, since they will employ antiphlogistics. In these cases, I have not only applied leeches to the perineum, but have bled from the arm, for, as is well known, the condition in question is sometimes met with in young and vigorous subjects. When it is really a nervous affection, blisters succeed well, and are of greater efficacy than electricity. I should add, besides, that since the diagnosis of strictures and prostatic engorgements has become more perfect, fewer cases of extraordinary sensations of the urethra have been observed; these phenomena are much more frequently and justly attributed to organic affections of the genito-urinary apparatus.

[Mr. Acton has devoted a chapter to the subject of *Monomania*

Syphilitica, or *Syphiliphobia*, a form of disease to which, he asserts, the medical profession is particularly liable! (2d Am. ed. p. 401.) He states, that instead of simulating certain affections, or complaining of sensations for the purpose of misleading the practitioner, the syphilophobist describes only what by an exhalation of nervous sensibility he fully believes he sees or feels. Like hysteria, syphiliphobia assumes every form of venereal disease found or described in books. He observes that these cases are very numerous in London, and we think that in our own large cities, those who see many cases of venereal affections, must have met with instances of the kind. We doubt, however, whether they could corroborate the assertion, that it prevails particularly among the medical profession. In confirmation of Mr. Acton's statement, that these patients are very apt to lodge complaints against the testes, we subjoin the following case: Some few years since, we were summoned hastily, at midnight, to a patient's chamber. No sooner had we entered, than he presented his scrotum, and directing our attention in turn to each of his testicles, with a doleful countenance, exclaimed, "Here, doctor, is Susan, and here is Mary; *cut them out!*" With much difficulty we persuaded him to defer the operation until morning! We tried, in this case, as Mr. Acton directs, "moral treatment, very little physic, and much exercise," to no purpose, and it was not until he became greatly emaciated, that some "Father Confessor" (the patient being a Catholic) effected what we had failed to accomplish, viz. his restoration to health.—G. C. B.]

BLENNORRHAGIC ORCHITIS.

The history of inflammation of the testicles has recently made unquestionable progress. Of this we may be readily convinced if we go no further back than to the time of Dupuytren. For example, this surgeon asserts, in his *Leçons*, that when the epididymis is affected, the swelling is not as large as when the whole parenchyma of the testis is involved. The fact is precisely the contrary. Boyer is still less advanced than Dupuytren. Sir Astley Cooper had more correct views; but the true progress in the history of this affection did not commence with him. The truth of these remarks will be obvious in the exposition of the additions to our knowledge on the subject, which I am about to attempt.

Causes.—Although orchitis is an accident of frequent occurrence, it is not an inevitable sequence of a blennorrhagia. Other causes are required for its production. Unfortunately these are not well determined. Nevertheless, it is certain, that this complication of blennorrhagia occurs most frequently in patients who have been guilty of imprudence of various kinds during the existence of the discharge, and who, among other excesses, have indulged in sexual intercourse. Some there are, who, though not guilty of the latter act, do not completely avoid excitement of an

analogous nature. When obstinate cases of orchitis are encountered, when the inflammation passes from one testicle to the other, or when the disease reappears, these facts should not be forgotten.

Improper treatment, or that which has been neglected, may certainly exert an influence on the development of orchitis. Injections have been much accused. Doubtless an irritating fluid may give rise to an orchitis, since the simple introduction of a bougie will, in some instances, produce the same effect. However, it must be acknowledged, that orchitis is not the accident most to be dreaded from the use of injections. One circumstance which has led to such a suspicion, is the fact, that they are generally employed in the last stages of blennorrhagia, a period most favorable to the development of orchitis, as I shall hereafter establish.

It should also be known, that this accident may occur, and not unfrequently, under hygienic conditions least favorable to the development of inflammation; for example, whilst the patient observes complete repose, and is under the influence of proper treatment, not by irritants, injections, and the resins, but of that which is most antiphlogistic and soothing. At the present time, there is in my service a very robust patient, who has had three attacks of orchitis, attended with violent pains. This patient strictly maintained the horizontal position, observed a mild regimen, and was guilty of no imprudence. Cases of orchitis have been seen to follow a hot bath, taken with every precaution.

The intensity of the urethral inflammation seems to have no influence in the production of this disease. Of 37 patients, interrogated by M. de Castelneau, for the purpose of ascertaining this fact, 31 had suffered moderately at the commencement of their blennorrhagia, 6 had experienced acute pains, and one of these 6 had had hemorrhage from the urethra so severe as almost to produce syncope. In this individual, orchitis appeared whilst he was confined to his bed, and while he was in a state of anemia from excessive loss of blood.

Can a *dry* blennorrhagia give rise to this disease? I prefer thus to propose the question. During the stage of urethritis, which is marked by an absence of the discharge, can orchitis occur? I reply in the affirmative, for I possess facts in corroboration of such an answer.

Certain seasons of the year, certain conditions of the atmosphere, favor the development of orchitis. Thus, I have occasionally observed, after sudden changes of temperature, the number of cases to increase, so as to appear almost like an epidemic.

Generally, orchitis manifests itself after the first, second, and even the sixth week of a blennorrhagia. When treating of urethral blennorrhagia in the male, I stated, that in the majority of cases, the affection was seated, primarily, in the fossa navicularis, and the anterior portion of the urethra. Thence, at different periods of the disease, the inflammation gradually or suddenly reached the other portions of the canal. Orchitis does not generally occur, until the inflammation has extended to the prostatic portion of the canal. When it does not appear until after the

cessation of the discharge, and, as we have observed, at the end of eight days in one case, of fifteen in another, we have reason to suspect the existence of an irritation in the region of the prostate, or the neck of the bladder. We then find that the patients have no longer a discharge, that they suffer somewhat in urinating, having *ardor* urinæ. As it is possible, on the other hand, for an inflammation to commence in the region of the prostate, or, at least, speedily to reach that part, it is easy to explain cases of orchitis which are met with either at the commencement, shortly after, or even before the appearance of a gonorrhœa. Orchitis exists always with an urethritis, whether the discharge, the ordinary phenomenon of this inflammation, be present or absent.

Age seems to exert no very marked influence in the production of this disease, though it may be observed that it is less frequent at an advanced age. Orchitis, involving the parenchyma of the testis, appears to be more frequent in persons about eighteen or twenty years of age, who are affected with blennorrhagia; while in those more advanced, that is, from thirty-five, forty-five, and fifty years, vesical and prostatic affections are more frequent. However, there is now (March 5th, 1852) in my service, at the *Hôpital du Midi*, two patients, aged thirty years, who have parenchymatous orchitis.

Orchitis may exist on both sides, but it is rare that both testicles are simultaneously affected; generally but one is involved, and when the other becomes inflamed, it is after resolution has commenced in the one first attacked. It is rare, but sometimes occurs, that orchitis passes rapidly from one testicle to another, without leaving traces of its first invasion. When one alone is affected, it is generally the left, and it is on this side that the inflammation begins when it involves both testicles. This may be explained by the fact that the blood is more easily returned from the right than the left testis. The epididymis is the part which is the first and most frequently affected; in this part, also, the inflammation continues for the greatest length of time. It is said that the discharge is sometimes suppressed when orchitis appears, or that, very frequently, its quantity is suddenly diminished. As a general rule it would be more correct to say, that during orchitis there is but a trifling discharge, and this for a good reason, viz., that the affection occurs in the last stages of blennorrhœa, when the discharge is of course small in quantity. The diminution or suppression of the discharge has therefore preceded the invasion of the orchitis, at least such is the fact in the majority of cases. It would be wrong, however, to deny the influence of orchitis in diminishing or suppressing the discharge, for when the inflammation of the testis subsides, we generally observe its return. It may happen that both the urethritis and the orchitis cease at the same time. Examine, on this point, the statistics of MM. Gaussail, Aubry, and de Castelneau. Of 187 cases, in 161 the discharge diminished suddenly on the appearance of the orchitis, and in nine it was totally suppressed; of fifteen which remained stationary, thirteen occurred to M. Aubry, who noticed that in all of the latter the

blennorrhœa was of long standing, and the discharge small in quantity.

Pathology.—A variety of opinions have been entertained as to the manner in which blenorrhagic inflammation invades the testis. It has been attributed to sympathy, to extension, and to metastasis. The doctrine of extension, or propagation, along a continuous surface, is that which is now most generally admitted: the inflammation extends from the urethra to the ductus ejaculatorius, from the latter to the vesiculæ seminales, thence to the vas deferens, from which it reaches the epididymis. M. Velpeau adopts this opinion, and has given the following account of the affection:

"It would seem that the induration and swelling of the vas deferens must always precede that of the epididymis, if the inflammation always extends from the urethra to the testis; such, indeed, is often the case. The epididymis, in certain patients, reaches to the inguinal canal and even to the iliac fossa. It is indurated, painful, equal in size to a large quill, and sometimes even to the little finger, and it may readily be mistaken for the vas deferens. But it must be confessed, on the other hand, that this indurated cord is not a constant symptom; that very often, indeed, the vas deferens and the whole spermatic cord are perfectly natural to the touch, insensible, and entirely normal, from the testis to the pelvis. If we carefully inquire into the early history of the case, we learn that pain, or uneasiness, is felt in the perineum, neck of the bladder, iliac fossa and inguinal canal, before it is perceived in the testis. After all, may not an inflammation be developed in the testicles nearly in the same manner as in the lymphatic glands, that is, by the retrocession or by the continuous progression of irritating particles from point to point, from the urethra to the epididymis, without seriously involving the canal through which such particles are conveyed? Moreover, the inflammation itself may be limited to the mucous surface of the vas deferens, whence it sometimes reacts upon the whole thickness of the canal, so that the absence of swelling, induration, sensibility, or even pain at this part, may as readily be comprehended as where the opposite condition obtains. This is analogous to what is admitted, and daily observed in every kind of canal, and especially in the lymphatic vessels."

M. de Castelneau, who has written a remarkable article on orchitis, and which is published in the *Annales des maladies de la peau*, defends the doctrine of a metastasis; but, according to him, it is not the matter of blennorrhagia which is transported, but, if we may so speak, the *cause*. I confess, for my own part, without denying the production of orchitis by extension of inflammation, such as we sometimes observe to follow the passage of a bougie, or a sound into the urethra, I am strongly inclined to admit this doctrine of metastasis, in a certain number of cases, for blennorrhagia is one of the diseases best adapted to this kind of displacement. Why is it that, in general, but one testicle is involved? The orifices of the ejaculatory canals are in close proximity, and both should be liable to the same influences. Why is it, also, that in

certain instances, orchitis passes rapidly from one side to the other, without leaving behind any trace of its existence on the side abandoned by the disease? And why do cases occur in which the vas deferens does not become swollen until after the epididymis?

I believe, likewise, that inflammation of the prostate is sometimes metastatic. Let me explain myself: I believe in the possibility of an affection of the neck of the bladder and the prostate, in cases of blennorrhagia, where the disease is seated in the anterior portion of the canal, and where it has passed over the rest of the canal to invade the gland and the neck of the bladder. It may happen even that the last-named parts shall be passed, and that the body of the bladder and the kidneys shall be attacked with blennorrhagic inflammation, while the intermediate tissues between the starting point and the organ last affected shall escape. Still farther, the articulations may become involved, as is well known, and surely no one in this case will pretend that the inflammation has extended along the continuous tissue of the skeleton to reach these parts. It is said that these facts favor the doctrine of sympathy as well as of metastasis, but this is a mere dispute for words alone. What I wish distinctly to establish is, that the doctrine which admits orchitis from extension of the inflammation from the urethra, is insufficient and incomplete.

Symptoms, Progress and Termination.—Before any change is perceived in the testis we sometimes observe a febrile state, chills, restlessness, nervous phenomena, and even syncope. Generally, there is at first a sensation of weight in the scrotum, which causes the patient to apply his hands to the testicles, or to make use of a suspensary bandage; sometimes pains in the loins are among the first symptoms: it follows a line extending from the kidneys to the scrotum. Some cases, indeed, commence with pains in the perineum, and a frequent desire to urinate, as in inflammation of the neck of the bladder. Frequently, there is at first a pain in the groin, and inguinal canal on the side affected, which pain may be very severe. Sometimes it extends towards the antero-superior spine of the ileum, and is soon felt in the testicle itself. The application of cold, the weight of the testicle whilst standing, walking, and particularly the jarring of the body, exasperate the pain and cause it to be reflected towards the corresponding kidney, rarely towards both. The heat and sensibility are greatly increased in the testis and epididymis, but not to the same extent in each. The sensibility often exists in an almost equal degree, and it is very rare that the pain is specially concentrated in the cord, and when such is the case, it is always, or almost always, in its inferior part. If the pain be sometimes very acute, this is not of long duration; having reached its maximum point, towards the third, fourth, or fifth day, it generally begins to moderate, and in forty-eight hours more becomes supportable. After it has once moderated, its further decrease is very slow, sometimes requiring three weeks before it entirely disappears. This pain is always increased by pressure. In the last stages of orchitis, it is only when

the testicle is touched, that it is felt. Sometimes the testicle has been observed to be evidently swollen before any pain is experienced.

The tumefaction begins occasionally in the cord, but more frequently in the epididymis; it rapidly increases and reaches its height in the course of three, four, or five days. So speedy is the development of the tumor, that its progress cannot be followed. The swelling reaches from the size of a hen's egg to that of the patient's wrist, or it may become still larger. It is composed of all the parts which enter into the composition of the scrotum, but especially of the epididymis. In two or three days after the commencement of a severe orchitis, the tumor forms a homogeneous mass, of almost equal hardness throughout. The scrotum on the affected side is tense, shining, adherent to the subjacent parts and of a red color, the deepest shade being on the external surface of the inflamed testicle, whence it extends, though faded, to the sound testicle. At this period it is difficult to determine the precise seat of the tumefaction, for it is exceedingly sensitive to the touch; but after two or three days, the mass being somewhat diminished, becomes separated into two parts, the one more anterior is the testis, the other, posterior and superior, is the epididymis, which overlaps the other to a considerable extent. Sometimes owing to vicious conformation, which is not rare, the epididymis may be situated anteriorly. It is then in this direction that we observe the hardest portion of the tumor. We know that the induration and tumefaction are sometimes remarked over a more or less extensive portion of the vas deferens, but not in every case. The testis is generally but little augmented in volume, and its consistence is not changed: the swelling of the epididymis, however, is on the contrary much more decided. When there is a more or less marked effusion into the cavity of the tunica vaginalis, we may feel the fluctuation and assure ourselves of the existence of a fluid; seldom is it sufficiently abundant to give rise to a transparency.

Resolution commences in the testicle, when the latter has been affected; it regains its natural feel towards the fifth or sixth day. The rest of the tumor soon begins to subside, but resolution is here much slower in its progress, and in the majority of cases, it is not complete until from the fifteenth to the thirtieth day; very frequently it is prolonged for a greater length of time. Resolution in the cord succeeds that of the testis, after which follows that of the epididymis, which is the last in order, and which sooner or later occurs. The resolution in the epididymis differs from that in the other parts, not only by its slow progress, but by the nature of that progress. In the testis and the cord, resolution is perfectly regular in its progress; in the epididymis, on the contrary, at first its course is rapid, and the anterior part of the organ is that in which it begins; when the tumor has diminished one-half in size, its further diminution is very slow, and at the posterior and inferior part of the scrotum may now be felt a very hard nucleus, which is very slow to disappear. These nuclei have doubtless been the means of causing authors to assert that an enlargement of the epididymis often lasts during life.

Should there be an effusion in the tunica vaginalis, the fluid is generally absorbed during the resolution of the other parts.

The spermatic secretion during the existence of orchitis has been but imperfectly studied. M. Lagneau has mentioned a case showing that a patient affected with a swelled testicle of two months' duration, had had, during an amorous dream, a pollution mixed with streaks of blood.

The fever accompanying orchitis is generally slight; it exists only when the disease is at its height, and in cases where the local symptoms present a certain degree of intensity. M. Marc d'Espine in 24 cases of orchitis, found 17 in which fever existed at the commencement, and 2 in which it happened during a relapse, but in which it was absent during the primary affection. M. de Castelneau has observed fever only in 11 out of 37 patients, a result which differs materially from that obtained by the observer above mentioned. But it must be remarked that patients present themselves to us at a time when the general symptoms have disappeared, supposing of course that they had existed. Their own statement then is our only source of information. Now, as all patients are not equally intelligent, I required, says M. de Castelneau, as symptoms of fever, a want of appetite and a decided heat of the skin.

Sometimes there are pains in the loins, and in the extremity corresponding to the side of the diseased testicle, with headache, nausea and vomiting. The renal pains as well as those in the inferior extremity, are explained by the nervous connections of the testicle with these parts and occasionally by a true complication on the part of the kidneys, when the pain reaches to such a height.

Varieties.—The description of orchitis which I have given, is of modern origin. The recent progress of science and my own researches have enabled me to fix the seat of inflammation in different parts of the testicle, and to establish varieties based on this special seat. I know what arguments may be opposed to this localization. It is evident, that if it be objected that one tissue of the testis cannot be affected without involving another, this is a reasonable objection, and applies not only to this, but to every case which comes under the observation of the pathologist; thus, when attempts are made to establish varieties of ocular inflammation according to the structures involved, we meet with the same objection. But as regards the testicle, if it be maintained that by the term epididymitis we are to understand that the epididymis is more particularly inflamed, and if by conjunctivitis we are to understand that the conjunctiva is more particularly inflamed, after these explanations no further argument is required. Here, then, the testicle being composed of three parts, the epididymis, the tunica vaginalis, and the glandular parenchyma, I shall establish three varieties corresponding to these different parts.

1. *Epididymitis.*—This is the most common variety. It is evident, that if the starting point in every case of blennorrhagic orchitis is the urethra, if the cause be conveyed through the vas deferens, it should be more or less arrested by the convolutions of this canal, that is, by the *epididymis*. Sometimes this part of the

testicle is affected, while the vas deferens remains sound, and then follows what is observed in certain cases of adenitis, the result of inoculation; we see, indeed, the gland affected by the virus or irritating cause, yet the vessel which transported this virus apparently preserves its complete integrity. It is thus, that we have inflammation of the epididymis from metastasis, or if it please, from sympathy.

The swelling belonging to this variety is the most voluminous and irregular. The epididymis, when not well supported, becomes compressed and flattened on its sides; it undergoes the most rapid changes, at least in the acute stage. When, from the anomaly to which I have already alluded, the epididymis is situated in front, the length of the tumor appears to be increased; it is almost cylindrical.

Epididymitis is less painful than the two other varieties which I shall presently describe.

What I have asserted in reference to the size of the tumor, where it is formed by the epididymis, may perhaps surprise the readers of the *Leçons Orales* of Dupuytren, who, as already stated, maintains exactly the opposite opinion. On this point daily experience completely refutes the opinion of Dupuytren, and if any would judge for themselves, they have only to visit my wards at the *Midi*, or attend some of our public consultations. Moreover, we can comprehend how an inflammation which invades an organ like the epididymis, a dilatable body, should easily expand the tissues, while the substance of the testis, enclosed by a sclerous tunic much more unyielding than that of the epididymis, cannot expand beyond a certain point.

The inflammation which makes such rapid progress in the epididymis leaves behind, nevertheless, indurated nuclei, the complete resolution of which is in general very slow. The seat of these small tumors is the part of the epididymis called the *tail*. These chronic inflammations, limited to small foci, are therefore but inflammations primarily acute, but which have become chronic. It happens also that these nuclei have a character primarily chronic, but then they proceed from some vice, and it is generally the tuberculous or syphilitic which gives rise to their formation or which protracts their existence. Tubercle especially is a frequent cause of chronic inflammation of the epididymis. Indeed, if it has not been preceded by blennorrhagia, and particularly if the tumor is very irregular and occupies but one side, no matter what the temperament or strength of the patient, tubercle is to be suspected.

Varicocele is one of the effects of epididymitis, especially when the latter occurs on the left side, where a predisposition naturally exists to varices of the scrotum.

In connection with epididymitis are observed very considerable engorgements of the vas deferens and the parts which surround it to fill up the inguinal canal. In these cases we sometimes find that the aponeuroses yield with difficulty to the swelling, thus causing a true strangulation, attended with many of the symptoms of strangulated hernia, such as pains in the abdomen, anorexia,

vomiting, and a tumor, the long axis of which follows the track of the inguinal canal, &c., &c. It may be distinguished from strangulated hernia by the antecedent circumstances, and the fact of the engorgement of the epididymis. When the cord becomes similarly engorged it gives rise to symptoms of peritonitis.

2. *Vaginalitis.*—Inflammation of the tunica vaginalis does not exist in every case when there is found more or less fluid in its cavity; if such were the case this variety of orchitis would certainly be most common, and it would almost always co-exist with epididymitis. We know, moreover, that M. Rochoux has asserted that this fluid nearly always exists, as it is maintained again that epididymitis is always present, for which reason it is proposed to call every case of blennorrhagic orchitis, vaginalitis or epididymitis. But it is evident that the serous effusion generally constitutes but an epiphenomenon; ordinarily there is, in the tunica vaginalis, a certain quantity of serum exhaled, because there is an engorgement of the vessels of the testicle. Indeed, when one of its principal parts is affected, especially the epididymis, it gives rise to dropsy of the tunica vaginalis, in the same manner as do certain abdominal tumors to ascites. This effusion is, properly speaking, passive; the opening of the tunica vaginalis gives exit to a limpid lemon-colored serum, but produces no perceptible effect on the progress of the orchitis. Sometimes, on the other hand, every circumstance goes to prove the existence of a true inflammation of the tunica vaginalis. The pain is sharp and constant; the tumor decidedly tense; there is neither fluctuation nor transparency, and if the serous cavity be punctured with a lancet, the fluid evacuated is slightly muddy, of a reddish color, and very hot. After this operation the pain is speedily relieved. The fluid is often reproduced, when it more nearly resembles that contained in chronic hydrocele. I have sometimes seen, after this trifling proceeding, the testicle become swollen, occupy the place of the fluid, and a parenchymatous orchitis rapidly succeed to a vaginalitis.

If varicocele sometimes follows an inflammation of the epididymis, hydrocele is rather one of the consequences of inflammation of the tunica vaginalis. If we closely interrogate persons affected with hydrocele, we shall find a great number admitting that they had an acute affection of the testis, which is but a vaginalitis. This variety of orchitis has undoubtedly existed when we meet with a multilocular hydrocele. The swelling from vaginalitis is smooth and even, more or less globular, it extends much farther forwards than in the other varieties, and does not retain marks of pressure upon it as does the swelling from epididymitis.

2. *Parenchymatous Orchitis.*—I have thought proper to apply this name to the inflammation which affects more particularly the parenchyma of the testis, and the substance contained in its firmest and most immediate envelope, the tunica albuginea. This variety I have remarked chiefly among the youngest subjects affected with blennorrhagia, about eighteen or twenty years of age. I have also observed it in persons not far from thirty years. Very seldom, indeed, is this variety a primary affection. In these

rare cases the patients present certain symptoms which I will presently describe, and there is no serum contained in the cavity of the tunica vaginalis, as I have proved by incision, of which I shall speak hereafter. Much more frequently, the parenchymatous orchitis has been preceded by an epididymitis. Sometimes it follows a vaginalitis; as I have already observed, I have emptied the cavity of the tunica vaginalis of the serum which it contained, and the next day I have seen the testicle become so tumefied as to fill the vacuum produced by the evacuation of the fluid.

The swelling in parenchymatous orchitis is less voluminous than in the other varieties. Where it coincides with a vaginalitis and an epididymitis it forms a part of the general swelling, though less than that produced by the epididymitis, but more than that by the vaginalitis. The swelling resembles, though in an exaggerated form, that of the testicle; the mass is tense, and of an ovoid shape. Anteriorly it projects more considerably than does that of epididymitis, but less abrupt than vaginalitis when the effusion in the latter affection is small in quantity, for, when in vaginalitis there is but a thin layer of fluid, the swelling remains of an ovoid form. In the variety under consideration, the part of the tumor which belongs to the epididymis is with difficulty distinguished from that which belongs to the testicle itself; all is one indurated and confused mass, covered by skin more or less red, and cellular tissue which is sometimes œdematous. The testicle is retracted towards the abdomen.

This is the most painful variety; it is attended with pains and cramps, which extend towards the groin, the iliac fossa, the kidney, and the inferior extremity of the corresponding side. Vomiting and very decided symptomatic fever are present; and it gives rise to reactions the most severe. This is explained by the seat of the inflammation; the tissue affected being enveloped in a fibrous sac which resists its expansion, and which thus gives rise to a true strangulation. We can therefore understand the havoc caused by this inflammation when it is severe. It produces not only suppuration, but mortification of a portion of the testicle itself, which is the more or less completely discharged.

Treatment.—In the treatment of orchitis a great variety of methods have been adopted, and in my opinion without benefit. Local and general blood-letting have been employed, together with sedatives, purgatives, balsams, revulsives, all kinds of cold and hot topical applications, mercurial ointment, cataplasms, cotton, *terra sigillata*, vesicatories, compression, and, last of all, chloroform.

I am completely satisfied of the inefficacy, the impotence of these means in a curative point of view. Let me explain myself. I believe that the common blennorrhagic orchitis, that is, epididymitis with more or less effusion into the cavity of the tunica vaginalis, and a little irritation of the testicle, will pursue its course, in spite of any or all the means above mentioned. From this it must not be inferred that I am opposed to all treatment in all circumstances of orchitis, in all its forms, for there are cases which

compel the practitioner to act temporarily, if for no other purpose than to mitigate the sufferings of the patient.

1. *Blood-letting.—Sedatives.*—It is certain that in some very plethoric or nervous subjects, antiphlogistics and sedatives cannot cure orchitis, nor abridge the duration of this inflammation, but can only moderate certain symptoms. For example, a very high fever has more than once been lessened by general blood-letting, and the pain subdued at least for a time, by leeches, cataplasms, of laudanum, aided by repose.

2. *Mercurial Ointment.*—The mercurial ointment, applied not by frictions, but in very thick layers, as in cases of peritonitis, and certain aithritic inflammations, may relieve the pain, and that too speedily. But if the mercury be continued under this form, a very unpleasant salivation may sometimes be produced. I am convinced that in certain young subjects, the ointment thus employed may prevent vaginalitis and parenchymatous orchitis.

3. *Purgatives.*—I believe that the repeated use of mild purgatives may promote the dispersion of some of the indurated nuclei of the epididymis, and that in the acute stages it is often necessary to remove the constipation. But, I repeat it, the ordinary course of an orchitis is not abridged by any of these means.

4. *Compression.*—This is of difficult application; the little bands which are used become easily loosened, and from the irregular form of the tumor, they act more on certain points than others. Besides, pressure cannot be borne in severe cases, where the inflammation runs high, and when the latter involves the tunica vaginalis, and especially the parenchymatous structure, as it does in certain cases of epididymitis; by compressing the tumor under such circumstances, we may produce symptoms of strangulation. The suffering excited, in some instances, by handling the tumor for the purpose of examination, enables us to form some idea of that which the patient must endure from the application of compression.

[Our author, though differing in his estimate of compression from some of the highest authorities, among whom may be named Messrs. Ricord, Acton, South, Langston Parker, and Egan, is yet far more moderate in his condemnation of this method (Fricke's of Hamburgh) than is Mr. Henry James Johnson. At page 212 of his "*Treatise on Diseases of the Genito-Urinary Apparatus*," he remarks, that from the torture he has seen patients undergo who have submitted to it, he "is inclined to compare it to the process of the Buccaneers of the Spanish Main, who slung their prisoners to the yard-arm by the testicles, until they had confessed where their dollars were concealed. If the inflammation is acute, it is a piece of ridiculous cruelty; if mild it is disproportionately painful, troublesome to manage, apt to lacerate or excoriate the skin, and not a little treacherous." We think that the majority of practitioners who have tried this plan, will agree with Mr. Johnson in his remarks on the difficulties in its application, and the accidents to which, from its exceedingly great liability to become deranged, it is apt to give rise. Even M. Ricord cautions us to be attentive to

these matters, if we would avoid unpleasant consequences. At page 177, of his 2d ed. of Hunter, he describes the conditions to which this treatment is applicable. When the spermatic cord is not too much engorged, and the cellular tissue of the scrotum is not the seat of a phlegmonous inflammation, when there is no tendency to suppuration or abscess formed, when the inflammation has been subdued by antiphlogistics, and when, if complicated with hydrocele, the cavity of the tunica vaginalis has been emptied, he considers Fricke's method superior to any other plan of treatment. If in the course of half an hour or an hour after its application the patient experiences no relief, but an aggravation of his sufferings, he directs that it should be at once removed, and mercurial ointment with fomentations or emollient cataplasms substituted. Mr. Langston Parker, p. 73, 2d. ed., states that he has repeatedly employed Fricke's method from the very commencement of the disease with the most complete success, and Mr. Egan, p. 104, of his excellent treatise, states that he does not remember to have witnessed a case in which its employment was not followed by speedy and permanent relief, and Mr. Acton thinks it has superseded the thousand and one remedies formerly employed (2d Amer. ed. p. 144). From what we have seen of it, we would advise the young practitioner, before resorting to it, to bear in mind the indications mentioned by M. Ricord, and the objections urged against it by Mr. Johnson and our author.—G. C. B.]

5. *Chloroform.*—This substance, when topically applied, produces at first severe pain, and I have had an opportunity of seeing a partial peritonitis from the employment of chloroform according to the method of M. Bouisson, who has highly extolled this plan of treatment.

6. *Puncture of the Tunica Vaginalis.—M. Velpeau.*—If it be true that the treatment ordinarily pursued does not retard the progress of orchitis; if leeching and compression are incapable of promoting resolution, operative medicine, properly speaking, may put an end to the accidents, or abridge the duration of the disease. When there is actually a vaginalitis, and a subacute hydrocele is formed, the puncture of the tunica vaginalis as first practised by M. Velpeau, may favor resolution and promptly relieve the pain. This puncture is made with a lancet or sharp pointed bistoury; it should be half an inch in extent. As soon as the instrument has penetrated the serous cavity, a demi-rotatory movement should be given it, by which the borders of the little wound will be separated, and the discharge of the fluid facilitated. The lancet should not be withdrawn until the fluid has been completely evacuated, that the lips of the wound through the integuments and serous membrane may preserve their parallelism, and the issue of the liquid be not prevented.

7. *Incision of the Testis.—Author's Method.*—In cases of parenchymatous orchitis, puncture of the tunica vaginalis is not sufficient; the inflammation is then accompanied by strangulation, for the organ affected is surrounded by a very dense fibrous sheath.

This is the variety of orchitis which I remove by an incision of the testicle. I puncture the tunica albuginea with a lancet or sharp-pointed bistoury, the opening being little more than half an inch in extent. This operation is attended with no more pain than that of puncturing the tunica vaginalis. Its safety is established beyond a doubt. I have operated on more than 400 patients in private practice, and at the *Hôpital du Midi.* My *internes* have often performed it in the night, during an exacerbation. It has never been followed by the least accident, and generally, in half an hour or an hour, the patient is greatly relieved. He sleeps the whole of the following night, and sometimes the following day. I have adopted this plan of treatment when other energetic measures have failed. The result has been the same: relief prompt and decided. But this trifling operation is not only sedative, it is antiphlogistic, a powerful resolvent, and a certain preventive of suppuration, and the consequent disintegration of the testicle; for after the puncture, the tumor is rapidly dispersed. The great number of these operations which I have practised may give rise to an impression that I have performed it in other varieties than the parenchymatous orchitis, in which suppuration is not of frequent occurrence. Indeed, when I became satisfied of the inocuous character of these punctures, I extended their employment to cases of epididymitis with swelling of the testicle, acute pain, and more or less sympathetic disturbance. In these cases, also, I have relieved the pain, removed the symptoms, and expedited the cure. For example, in one instance, by some anomaly, the epididymis was carried forwards and downwards. Inflammation in this part produced a tumor, which I mistook for a swelled testicle. I therefore cut the epididymis, by which proceeding the pain was relieved, the sympathetic disturbance removed, and resolution greatly promoted. These punctures, then, are useful not in the treatment of parenchymatous orchitis only, as I at first proposed and practised; they are beneficial not in the treatment of vaginalitis only, as M. Velpeau has often proved; but they may also promote the resolution of an epididymitis, and prevent the accidents which this inflammation might produce.

To this operation objections have been made; it is supposed that by it, a large incision is made in the organ, and great fears have been expressed for the safety of the tubuli seminiferi, which must be wounded and obliterated, whence must follow atrophy of the testicle, impotence, and sterility! Now the fibrous envelope of the testicle is divided to the extent of little more than half an inch in length, and less than half in depth. With every precaution, some of the tubuli seminiferi may be reached, but is it possible for the obliteration of a few of these innumerable ducts to produce atrophy of the testicle, and to render the patient impotent? As to the production of atrophy, I can speak from great experience, for all of my patients have been strictly watched in reference to this matter, and that too for a long time after the operation; and in no instance has the testicle become diminished in size or consistence. There is no reason to apprehend impotence or ster-

ility, for even though but one other testicle remains, it is difficult to comprehend how the obliteration of some of the tubes of one testicle should destroy the functions of the other. In certain tubercular affections of the testicles, both of these organs are partly destroyed, and yet the patient is not generally rendered impotent. Further, if we wish to obliterate a great number of these tubes, the best method is to permit the inflammation to pur sue its course, and the suppuration which follows will be sure to effect our object. Now, nothing but a trifling incision can arrest the progress of an acute inflammation of the parenchyma of the testicle itself. What is most extraordinary, the two most able and experienced surgeons who have opposed me in this matter, have made the same and the least important objection to the practice. Since then, one of these same surgeons has claimed to be the inventor of this proceeding! M. Velpeau has remarked that this operation alarms both patient and practitioner. Who has ever been frightened at a simple puncture of the tunica vaginalis? Patients daily submit to it without hesitation, for the operation is daily performed by the practitioners whom I have mentioned. Now, when we are puncturing the fibrous envelope of the testicle, does the patient know whether we penetrate a few lines more deeply? Practitioners, I am sure, must derive confidence from the numerous facts which daily occur in favor of this method.

BLENNORRHAGIC PROSTATITIS.

Chronic engorgements of the prostate have in modern times been carefully studied. Home, J. L. Petit, and very recently MM. Mercier and Civiale, have devoted much attention to these affections as observed in old people. But acute prostatitis, that which is met with in persons under fifty years of age, and which is one of the accidents of blennorrhagia, has been much neglected. Doubtless, those authors whose attention has been directed to the subject of urethral blennorrhagia, must have noticed certain symptoms of prostatitis; thus Benjamin Bell has briefly described its history upon which I shall soon enter, but its complete history has yet to be made and detailed, and authentic facts for the purpose are still wanting. I will here insert the histories of three cases, they will be of service to those who will hereafter attempt a complete description of blennorrhagic prostatitis. The particulars of these cases were collected by M. de Castelneau, while he was my *interne* at the *Hôpital du Midi*.

Case 1. Diot, æt. 40, a market-house porter, with brown hair, black eyes, dark skin, of ordinary height, muscles well developed, entered the *Hospice du Midi*, Ward 10, No. 5, on the 6th Feb., 1843. His health had always been good, having never suffered either from syphilis nor any other malady. On the 1st Jan. he had connection with a widow woman, who was not menstruating. He knows not whether she was diseased. At the end of four days, there was a slight discharge from the urethra unattended with

pain. This discharge continued about the same for ten days, when he experienced a prickly sensation in urinating, this was soon followed by frequent desires to urinate. The urgency of these desires increased, and became finally so irresistible that the patient was obliged to satisfy them wherever he might be, under the penalty of passing his urine involuntarily. After eight days, to these symptoms was added a greater or less difficulty of urinating, which, since yesterday, has become converted into a complete retention, and thrown the patient into a state of great anxiety.

After his admission, the catheter was introduced, which entered the bladder with the greatest facility, and without producing more than ordinary pain, its pavilion having only been turned a little to the left, when its beak reached the region of the prostate. About twenty ounces of urine were forcibly evacuated. The urethra is the seat of burning, pricking, shooting pains throughout its entire length, which are felt most severely deep in the perineum. This pain prevents the patient from sitting, and causes him to groan continually. An examination *per rectum*, detects a tumor with a *squared* surface, so to speak, and presenting two lateral borders, nearly parallel with the direction of the intestine, and two other edges, the one anterior, the other posterior and perpendicular to the first. The surface by which these borders are intersected, may have about two inches in extent from one side to the other. The angle formed by the junction of the right and posterior border, is much more salient than that formed by the posterior and left. This salient angle, more or less decided, exists throughout the whole length of the tumor. Pressure on this tumor is insupportable; to the touch it presents the same feel as a phlegmonous tumor offering an obscure sense of fluctuation. There is but a very small discharge of a sero-mucous nature from the urethra.

The face of the patient is red, the conjunctiva injected, the eyes prominent; the heat of the skin is increased, and the pulse is about 100. He neither eats nor sleeps. The use of the catheter afforded some relief. Prescription: orange Tillen tisane; thirty leeches and cataplasm to the perineum; diet. Evening: the pain in the perineum has somewhat abated, but the retention of urine is always complete. The catheter is again introduced with the same facility, its handle being always a little deviated laterally when the break arrived at the prostatic portion of the urethra. No change of remedies.

Feb. 7th.—Morning: patient did not sleep last night, and it became necessary to use the catheter at 3 o'clock in the morning, which instrument has always been very readily introduced. The tumor when examined by the rectum, presents the same volume as yesterday. In other respects the same as last evening. Prescription: twenty-five leeches to the perineum, followed by a cataplasm, two pills of opium and camphor, camphorated lavement; hip-bath; other treatment unchanged.

8th.—The tumor has sensibly diminished in volume; it is soft and has a feeling of fluctuation; on pressure the pain is about the same, but less spontaneously; the lavement brought away one

stool, which caused severe pain in the tumor. In the night the patient was able to expel some drops of urine; nevertheless it was necessary to use the catheter, which as before was introduced with perfect ease. The urine was expelled in jets the same as before: slept none, countenance a little less anxious, pulse 90, and weaker. Same prescription, but fewer leeches.

9th.—Scarcely any change; the patient, however, suffers somewhat less, but can pass his urine only in drops. The tumor seems to be diminishing in size, at least on the side of its salient angle. Catheterism as before. Pulse from 85 to 90, still very strong; heat of skin somewhat more than natural. Same prescription, ten more leeches to the perineum, and diminish the quantity of fluid used in the lavement.

10th.—Marked improvement: has passed a glass of liquid at seven or eight different times, drop by drop: catheterism not required during the night; slept a little; pain less severe in the urethra and perineal region, except on pressure, when it is still very great. The finger introduced into the rectum, discovers that the angle so salient on the right side, is almost completely effaced, and the tumor is but little more prominent on this than on the left side; throughout its whole extent it has equally diminished, and has assumed a softer consistence. Heat of skin nearly normal; pulse of less force and from 70 to 75; appetite feeble. The urethral discharge has become somewhat opaque and a little more abundant, but nothing passed which leads to a suspicion of the opening of an abscess in the urinary passages. Heat of skin normal; pulse more feeble and 70; appetite good. Catheterism is practised this morning with the ordinary facility. Tillen's tisane, cataplasm on the perineum, prolonged hip-bath; broth twice.

11th.—More than two glasses of urine passed without the aid of the catheter, and almost entirely drop by drop; at times only when the patient makes a powerful effort, the urine issued in a very fine stream, which ceased almost immediately. The catheter was used only once last evening. The tumor examined *per rectum* continues to diminish in size, especially, at its angles which are more and more effaced. Pain even on pressure slight. Sleep has been interrupted only by the constant frequent desire to urinate. Appetite very sharp, pulse and heat natural. Same prescription, with the addition of soup twice.

From this time the patient continued uninterruptedly to improve, and urinated with more facility. February 18th, the urine is passed almost without pain, though more frequently than natural. February 26th, urine is passed without difficulty. The tumor steadily diminishes, and is quite insensible to pressure. When the patient left there was no unnatural projection in the rectum. The urethral discharge diminished in proportion to the increase of inflammation of the prostate. February 28th, it is almost as copious as before the supervention of the above-named accidents. From this period to the 11th March, 1 drachm of turpentine was daily used without benefit; then cubebs were employed in increased doses, even as high as 5 drachms daily. On

the second day of its administration, the discharge had perceptibly decreased. On the sixth it had completely disappeared. The use of this medicine was continued until the patient left, and the discharge did not return, although, for five days before he left, he had spent part of the time in the garden. His food has been gradually increased to its natural quantity, and yet his digestion has not been disturbed. In fine, the patient left the hospital on the 3d April in perfect health.

I know of no more complete or conclusive case on record. Here we see a prostatitis following close on to a blennorrhagia. The disposition to urinate was constant, the retention of urine complete. The pain in the perineum was so severe that the patient was unable to sit. The prostate was considerably enlarged. During the prostatitis there was but a mere weeping from the urethra. The catheter was introduced with ease; it was turned from its course laterally, showing that one lobe of the prostate was larger than the other, a fact which was proved by examining with the finger introduced into the rectum. The subsidence of the disease was coincident with the reappearance of the urethral discharge. The resolution of the tumor formed by the prostate was complete, proving that it depended solely on an acute inflammation. The application of leeches succeeded perfectly.

Case 2d.—Collat, æt. 27, printer, was admitted July 8th, 1844: constitution robust; for some years had been subject to rheumatism. About three weeks since, four days after an impure connection, this man was attacked with blennorrhagia. The discharge became speedily white, thick, very copious, but the pain was not severe in urinating. On the 6th July, there was scarcely any pain whatever. That evening he indulged excessively in alcoholic drinks; the next day he could not urinate. In this condition he passed Sunday, the 7th July, and on Monday morning he sought relief.

July 8th. The face is pale and anxious; pulse feeble; body bent forward, hypogastrium tense and painful; frequent disposition to urinate, impossible to be satisfied; a sense of weight in the perineum, tenesmus in the lower part of rectum. The dulness in the hypogastrium extended to the umbilical region. Nearly two and a half quarts of urine were drawn off by the catheter (the patient having passed none in forty hours); the instrument was easily introduced, its passage through the prostatic region alone having been attended with pain, but the surgeon encountered no obstacle. A rectal examination detected a marked enlargement of the prostate. Buttermilk; twenty leeches to the perineum; a soothing lavement; diet; and the introduction of the catheter three times in twenty-four hours.

9th. The leeches drew but little blood; treatment not changed; a hip bath ordered. Fæces more freely passed, but at the time of their evacuation, the patient experiences pain and decided vesical tenesmus. The catheter used three times.

10th. Improvement; less frequent disposition to urinate; and the patient passes only some tablespoonfuls of urine; size of the

prostate diminished. Buttermilk; twenty leeches to the perineum, catheter used twice in the twenty-four hours.

11th. Much blood discharged by the last leeching; great improvement; the prostate reduced nearly to its natural size. General bathing; catheter still used twice.

12th. Patient has passed without the catheter, during the night, at different times, nearly a pint of urine. Prolonged general bathing; catheter used once during the evening.

13th. The examination, *per rectum*, shows that the prostate is not enlarged. The catheter is no longer required. Indeed, he passes his urine well, after considerable intervals, and in a continuous stream. The blennorrhagia has reassumed an acute character, the discharge is white, thick, but unattended with pain.

20th. Tisane of fir-tree buds, and powdered cubebs. The discharge gradually disappeared, and the patient left cured on the 31st July.

In this case, the blennorrhagia was already of long standing. It should be remarked, that the exciting cause was the excessive indulgence in alcoholic drinks, which was almost immediately followed by prostatitis, since on the next day the retention of urine was complete.

Case 3d. B. æt. 30; admitted 10th June, 1844. Constitution not very robust; temperament lymphatic; usual health good. About eight months since this man contracted a blennorrhagia. No regular treatment was followed, having been interrupted by excesses of every kind. Each relapse was followed by acute symptoms, which diminished of themselves whenever the patient conducted himself properly, and observed repose. On the 9th June, this man drank immoderately of spirituous liquors, indulged repeatedly in sexual intercourse; in the night found it impossible to urinate, and on Monday morning was in the same condition. He then sought advice. His state was as follows: countenance pale and anxious; skin cold; pulse feeble; his body was bent forward as if by some irresistible force. The bladder was distended by a large quantity of urine; there were sharp pains in the lower part of the belly, and a sense of weight in the perineum, neither pain nor tenesmus in the lower part of the rectum. A rectal examination detected a very decided enlargement of the prostate, which is hot, but little painful, except on strong pressure. The catheter was used as soon as the patient was admitted. At least three and a half pints of urine were withdrawn. The instrument was introduced without difficulty, yet on passing the prostate region it excited an abnormal sensation. Milk-whey; twenty leeches to the perineum; diet. In two hours the vesical tenesmus was as strong as in the morning. Catheter used at two o'clock, at six o'clock in the afternoon, and at eleven o'clock in the evening.

June 11th. No change; bladder still distended; patient unable to expel the least drop of urine; no effect from treatment; no blood drawn by the leeches. General bathing; twenty leeches to the perineum; diet. Catheter used four times; during the even-

ing leeches again applied, the first not having taken: six only drew blood; thus, of sixty leeches, only six were of any use.

12th. No change; same prescription. Leech bites now discharge freely; and an improvement is manifest; at 11 o'clock in the evening the finger passed into the rectum detects a decided diminution in the size of the prostate; catheter, however, had still to be used four times. During the night, by great efforts, the patient succeeded in passing about half a glass of urine at different times.

13th. This morning the bladder is still distended, but the hypogastric pain is less. The patient craves food. No fever. Milk-whey; prolonged general bathing; soothing lavement; and some broth were ordered. Catheter used only three times in twenty-four hours.

14th. Patient begins to urinate himself. Prostate still diminishing in size, having nearly regained its natural dimensions; catheter still required twice a day, morning and evening, until the 16th June. Milk-whey, twenty leeches to the perineum; soup twice. Improvement continues. On the 17th, enlargement of prostate gone; and patient passes his urine naturally.

When the patient was admitted there was but a slight *weeping* of serum from the urethra; now the discharge reassumes its acute form. The right epididymis is swollen. Ordered rest in bed; cataplasms over the swelling; light nourishment. June 30th, tisane of fir-tree buds, powdered cubebs five drachms. Patient left cured on the 10th July.

In this case, too, the prostatitis was caused by the immoderate indulgence in alcoholic drinks, and by other excesses. The enlarged gland was hot, but less painful than in the other examples. The reappearance of the urethral discharge coincided with the subsidence of the prostatitis.

In all three of these instances we observe that the disease occurred in persons upwards of thirty years of age. As in the case of orchitis, it is not the severer forms of blennorrhagia which produce it. In the three cases cited the discharge was slight, the exciting cause, excessive indulgence in alcoholic drinks, and a complete retention of urine followed, which might have led to the suspicion of obstruction in the urethra, or even a paralysis of the bladder. The catheter, nevertheless, was readily introduced, and the urine passed in jets through the instrument. It should, however, be remarked, that the passage of the catheter through the prostatic portion of the canal, was attended with pain. The cure always coincided with an increase of the discharge. If we adopt Benjamin Bell's divisions of blennorrhagia we should say that it had passed into the second or third degree.

How shall we explain the retention of urine and the facility with which the catheter was introduced in the case of a prostatitis? We know that the gland may be enlarged throughout its whole extent, or that this enlargement may be confined to one of its lobes. In the latter case the middle lobe is most frequently affected. When the patient would void his urine this enlarged lobe presses against

the commencement of the urethra and obstructs the passage of the urine. The latter, in trying to pass, by its pressure against this lobe, produces a kind of valve, which the catheter, on the contrary, easily thrusts aside. The same occurs when one of the lateral lobes alone becomes enlarged; the tumor may cause the urethra to deviate towards the opposite side; it still acts as a valve; in this case the catheter passes readily into the bladder and rectifies the prostatic portion of the canal. Once in the bladder we feel that this instrument is turned to one side, as in the case first reported.

In an old man we might suspect a paralysis of the bladder; but what happens then? The catheter reaches this organ but the urine drivels away, while in the three cases just detailed it issued in a strong and continuous stream.

In the three cases observed by us, the patients complained of anal and vesical tenesmus, and of sharp pains during defecation; the examination *per rectum* detected a tumor corresponding to the situation of the prostate, in one (the first) case it presented a feeling as if it had been *squared*. Except in one case this examination was very painful, the tumor was hot, and had the elastic feel of an inflamed testicle. The pain was increased by sitting, walking, or crossing the legs. In one case the patient's body was strongly bent forwards and could not be straightened.

[Mr. John Adams, of the London Hospital, in his recently-published work on the *Anatomy and Diseases of the Prostate Gland*, states that a swollen state of the hemorrhoidal veins, forming external piles, frequently accompanies this distressing disease, and that these are attended with painful itching sensations around the anus and weight in the perineum, materially increased when the patient is in the erect position. He also confirms our author's remarks, that prostatitis may occur in the chronic as well as in the acute stage of blennorrhagia, and that the patient is liable to it on exposure to cold and wet, or any other exciting cause, though a gleet only remains. He states that one of the most severe cases he ever saw occurred in a patient twenty-seven years of age, who had only a slight gleety discharge. In this case, as well as in those reported by our author, "there was no difficulty in the introduction of a moderate-sized silver catheter," though the retention of urine was complete. After perusing Mr. Adams' report of this case, our author's explanation of the facility in which the catheter is introduced in prostatitis, seems, to us, quite satisfactory. The remarks of Mr. Adams on this disease are worthy of careful study.—G. C. B.]

The treatment in all was the same; the repeated application of leeches in large numbers to the perineum, which caused a subsidence of the symptoms, as already mentioned. With the removal of the prostatitis we have seen the return of the blennorrhagia.

I have already stated that Benjamin Bell had imperfectly sketched the history of blennorrhagic prostatitis. He established the fact, that it may set in gradually or become at once developed, that is, by the extension of the urethritis, when the latter is already

of long or very recent standing. He asserts, what is possible, that the prostatitis may occur suddenly when the commencement of the urethra is inflamed, without requiring an affection of the intermediate points of the canal; in which case there is a kind of metastasis. Benjamin Bell, with reason, extolled the use of lavements, consisting of:

℞. Tinct. Opii. ♏xxx.
Amidon. ʒ ii.
Aq. q. s.

Inject gently into the rectum. An excellent method of relieving the vesical pains and tenesmus.

According to Bell, it is better to promote than to suppress the discharge, that is, to diminish the inflammation by degrees. For this purpose he placed great dependence on bloodletting. He prescribed astringent or emollient injections, which was wrong, inasmuch as nothing, in acute prostatitis, can be more injurious than the introduction of liquids into the urethra.

BLENNORRHAGIC CYSTITIS.

There are two different methods of treating blennorrhagia, which in my opinion are equally dangerous; viz. that which attacks it violently at the onset, and that which consists in an almost complete inaction. Both of these plans may lead to a chronic discharge, and the extension or displacement of the disease. Thus, it is remarkable, that all the probable cases of nephritis are more or less connected with blennorrhagia; it is remarkable, I say, that all of these patients had taken Chopart's potion, or some other resinous anti-blennorrhagic. Inflammation of the neck of the bladder, or of the bladder itself, is not rare, after the use of these means. But by inaction the same result may follow. Thus, the following case was furnished by a subject affected with a very mild form of blennorrhagia, which became transferred from the urethra to the bladder, and this, too, while the patient observed complete repose, submitted to regimen, and guarded against excesses of every kind, as well as the sudden changes of temperature. I shall confine myself to a description of this case, as the cystitis, which most commonly arises from the gradual extension of the urethral inflammation, is analagous to all the cases of cystitis which have been described in standard works. This case, moreover, is especially interesting in a practical point of view; it is a remarkable example of success obtained by cauterizing the perineum.

Case 4th.—G. æt. 30, quarryman by occupation from the age of fifteen; born at Montigny, but resided in Paris since six years old; of high stature, strong limbs, ruddy complexion, hair and beard black and copious, of vigorous aspect. G. always enjoyed good health; has been accustomed to drink much wine, but little

brandy; was never addicted to masturbation; never had sexual intercourse before the age of twenty, and until 1840 had always indulged in it with great moderation; during the past two years, however, he has carried it to excess. His labor was difficult, though he never descended into the mines. About the 20th of May, 1842, the patient, who had never suffered from the venereal disease, had connection with a prostitute, the result of which was a discharge. At the commencement the pain in urinating was very severe; the matter discharged was of a whitish color, not thick, but abundant in quantity. He suffered from frequent and painful erections. G. did not submit to any treatment; he stated that he had followed regimen alone, but continued to work until the 26th of May. Then the pain became more severe, and the glans and prepuce swollen. The patient confined himself to his bed until the 2d of June. On the 3d he came from Montrogue to Paris, and obtained a bed in my service.

At this time the prepuce was swollen, red œdematous, and crossed the glans, which was itself enlarged; the whole covering of the penis was infiltrated with serum. A whitish matter was discharged through the opening of the prepuce, and the pain was very severe. Ordered local emollient baths, to be prolonged and repeated three times a day; emollient injections between the prepuce and glans; rest in bed; an allowance of food, and general bathing.

Under the influence of these means the external symptoms rapidly improved. On the 15th June there remained but slight œdema at the inferior part of the prepuce, which yielded in the course of a few days to compression made with narrow straps of diachylon plaster.

June 25th.—There exists only an urethral discharge, thin, and small in quantity; pain however whilst urinating, and after urinating is very severe. Patient refers the maximum of pain towards the meatus urinarius. He observes the same regimen.

30th.—Patient has been allowed three portions of food, but the pains have increased, and a little blood is voided with the urine, which in other respects is quite limpid; he urinates six or seven times in the twenty-four hours. No change in the discharge; two portions; confinement in bed; three purgations to remove an obstinate constipation, to which, moreover, the patient is accustomed.

July 6th.—Discharge the same, and at each attempt to urinate little clots of blood are passed; the urine is still mixed with some shreds of blood; the pain is the same whilst voiding urine and for some time after the act, when the patient becomes tranquil.

14th.—Urine is no longer mixed with blood; the discharge is much less, but the patient is compelled to urinate more frequently, being warned by a severe pain the perineum. This pain is not increased by the passage of the urine, but it lasts for a quarter of an hour after the water has passed. One portion; two of milk; whey for drink, and patient to remain quiet.

20th.—For several days the patient has urinated almost every

hour. When the desire is felt he experiences a sharp, overwhelming pain behind the penis; if the desire be resisted, the pain extends to both groins, and compels him to urinate. During the act it is felt at the root of the penis. Another pain exists in the hypogastric region, at a point which corresponds to the situation of the bladder. The discharge is very slight; the quantity of urine is not increased. The urine, which for eight days has been perfectly limpid, now deposits a thick layer of greenish mucus, resembling jelly, thready, and adhering to the bottom of the vessel. The pains are very severe, and the disposition to urinate most frequent towards evening. At the same time there is some febrile excitement. Ordered to continue regimen; twenty-five leeches to the perineum, and the bath.

28th.—The leeches have been applied the second time. The pains are greatly diminished, and the patient has not urinated more than fifteen times since yesterday morning. Last evening did not feel the lassitude and febrile excitement which had existed for some days, but the deposits in the urine are still the same. Patient still suffers in the hypogastric region. Ordered inspissated turpentine one drachm; continue the baths.

Aug. 3d.—The discharge is very slight, almost without color; deposit in urine less abundant, less viscous, and not of so green a color. The pains continue severe; patient urinates fifteen times in the twenty-four hours; urine slightly increased in quantity. Dose of turpentine increased to two drachms; perineum cauterized with Vienna paste; milk-whey; two portions.

12th.—The eschar has separated, and a pea is inserted. Turpentine to be continued in two-drachm doses; urine becomes more and more transparent, only a slight deposit of a whitish color remaining in the bottom of the vessel; this deposit is but slightly adhesive, and the color of the urine is changed to citron. The pain which warns the patient of the necessity for urinating is still very severe behind the penis; it continues during the passage of the urine, but ceases immediately after it is evacuated. Patient urinates twelve times in the twenty-four hours; he asks for food; double allowance; three times the quantity of milk; continue the turpentine.

25th.—The discharge has ceased, but from time to time there is a very slight *weeping*. The urine is voided without pain, and has been limpid for some days. The dispositions to urinate are less frequent, and manifest themselves by less urgent desires; besides, it is now at the root of the scrotum, and not behind the pubes nor in the groins. Continue the cautery; omit the turpentine; treble the allowance.

Sept. 3d.—Patient has eaten four times, and sits up every day. He urinates not more than five or six times in twenty-four hours, and this without difficulty or pain. He can resist for hours the disposition to void his urine, without inconvenience. Urine is clear; and there is no discharge from the urethra. The improvement is constantly progressive.

10th. G. is perfectly cured, and obtains his discharge.

I recommend to practitioners the application of the cautery to the perineum, a plan of treatment which I often adopt in obstinate cases of cystitis. Sometimes I substitute for it the seton, which I pass through a fold of the skin in the same region. For example, in Ward No. 11 of my service, was a patient troubled with an affection of the bladder, which had resisted every possible indirect means, and two applications of the cautery, but which yielded to a seton inserted in the perineum.

BLENNORRHAGIC NEPHRITIS.

The attention of the profession begins to be seriously directed to the study of inflammations of the kidneys, in their connection with chronic affections of the urethra, the prostate, and bladder. These cases of nephritis moreover are very frequent, for most of the diseases of the genito-urinary apparatus which precede that of the kidneys, being attended with more or less complete retention of urine, it is reasonable to suppose that the too prolonged sojourn of the urine should become a new cause of aggravating and of extending the inflammation already existing, which passes from the bladder to the ureters, and is thence often transmitted to the kidneys. M. Rayer reports a case,* showing the existence of inflammation in its most extensive form. The patient was first attacked with blennorrhagia, then followed stricture with infiltration of urine, and abscesses; to these succeeded pains in the hypogastric regions, about the kidneys, frequent dispositions to urinate, purulent urine, numbness in the lower extremities. Finally, the death of the patient afforded an opportunity of establishing the anatomical lesions of every part of the genito-urinary apparatus. But when these lesions occurred slowly, as we find recorded in the books, as M. Rayer remarks, it may be suspected that some other inflammation is added to the effects of the blennorrhagic inflammation, which, besides, for some time, has singularly changed its characters. For example, in the case reported by M. Rayer, this practitioner observes, that the symptoms of nephritis appeared seven years after the blennorrhagia, and the nephritis was calculous. M. Rayer has recorded no case which scientifically establishes what I call *blennorrhagic nephritis;* in other words, that inflammation which in its nature may be compared to orchitis.

Benjamin Bell, in his extensive treatise on *Gonorrhœa Virulenta*, is very brief on the connections of this affection with nephritis. He observes in one passage:† "The kidneys become sometimes affected through nervous sympathy, or in consequence of the extension of inflammation along the ureters." We have, then, two kinds of blennorrhagic nephritis, which may be compared to blennorrhagic orchitis. This opinion of Benjamin Bell is worthy of note, as it has some bearing on the case reported in the LXIId. letter of Morgagni. It is that of a chevalier, æt. 46, who had

* *Traité des Maladies des Reins*, t. iii.
† Vol. i., p. 41.

three attacks of blennorrhagia, followed by accidents, the seat of which was always referred to the bladder, which organ was supposed to be seriously affected; now behold what the autopsy revealed: "The kidneys were smaller than natural; their form was extraordinary; and presented at various points externally several protuberances. The dissection of these brought into view a sanious humor, which had an open passage to the calices. But in the bladder, which, by several scientific men, was unanimously supposed to be the seat of the principal disease, nothing of consequence was found, except a slight erosion about the orifices of the ureters.

In this case, the blennorrhagic inflammation had leaped over the bladder and seized upon the kidney, which was found in a state of suppuration. In reading this case, we cannot but regret the absence of details, in reference to the condition of the urethra and the prostate.

The connections of blennorrhagia with nephritis are very remote; in the reports which I have been able to find in different works, a long time has always intervened between the two affections There have always been several attacks of blennorrhagia, and the appearance of the nephritis is of a date very distant from that of the last blennorrhagia, which is considered as its cause. I insert in this place the particulars of a case which occurred in my service, and which establishes, in a manner much more precise, the intimacy of the relations existing between blennorrhagia and nephritis.

Case.—P. Theophile, æt. 23, painter, born at St. Brieux; pale complexion, black hair, middling height, statue lean, limbs small, muscles imperfectly developed, health generally good. P., however, was easily fatigued. Having lived in Paris for the last five years, during this time was guilty of excesses with females, not so much for the last two as the three preceding years. In other respects, his conduct had been good. At the age of 17, he contracted a blennorrhagia from his first connection with a female. From the commencement he suffered severe pain in urinating, the discharge was of a greenish color, and abundant in quantity, and there was redness about the mouth of the urethra. He adopted a severe regimen, and made use of tisanes for a month; then he took Chopart's potion, and the discharge entirely ceased. One month afterwards, P. contracted a new discharge, which was less painful than the preceding, and which was cured nearly in the same manner. At this period he came to Paris, where he resided for two years without being affected by the venereal disease.

About two years since he had a third attack of blennorrhagia. The latter was not of an acute form; indeed, there was but trifling pain, no redness, the discharge of a white color, rather thin, and small in quantity. The patient submitted at first to regimen, without adopting any active treatment. After some weeks, there was nothing but a *weeping* from the urethra, which appeared principally in the morning, and which increased at intervals, attended with an itching sensation in the urethra. P. resumed his habits, still had connection with females, &c., &c. About the 10th of Sep-

tember last, matters being in this condition, P. experienced pain in urinating, and still greater pain during an erection. The discharge became thicker and more abundant. Was this a new blennorrhagia that the patient had contracted, or was it an aggravation of the old attack? At any rate, it lasted for twenty days, with the same characters as at first, when the patient, for a whole night, indulged excessively in wine and brandy. The next day the discharge became thicker, of a greenish color, and slightly tinged with blood; the emission of urine was accompanied with a smarting sensation towards the glans. Soon a more acute pain was felt behind the pubis, which was exasperated by the accumulation of urine, and the efforts to expel it. The disposition to urinate was not more frequent than usual, but the desire was more urgent; sleep was good, and uninterrupted during the night. He remained in this condition for about two weeks. P. continued the use of the baths; he pretended to observe a proper regimen, yet he ate large quantities. He took long walks in the evening, made use of copaiva, and purged himself repeatedly. The pain behind the root of the penis rapidly diminished, the discharge completely ceased, and he had only a slight and shifting pain in the pelvis, which was not increased in urinating.

During the night of the 15th Oct. he was disturbed by chills, and was soon seized with a sharp, fixed, deep-seated and lancinating pain, on a level with the left kidney. He was restless during the whole night, but was somewhat better in the morning. The pain became greatly aggravated every evening; it was always referred to the situation of the left kidney, and was perfectly limited to this region. His nights continued to become worse and worse; the pain which increased daily, became so severe as to extort cries from the patient. His only relief was obtained by lying on the side affected, and by taking large doses of the syrup of opium. He remained in bed, and took only a little broth, for, to use his own language, "I had fever." A physician in town recommended the application of a cataplasm to the painful part, and expressed the opinion that he would soon be relieved.

P. came under my care, Oct. 27th, 1842. During the whole day he was affected with tremors, which he attributed to the change from his hot chamber to a colder temperature. Pain very severe in the region of the left kidney, fixed and confined to this space. Urine copious, voided naturally and without pain, and at healthy intervals it is of a high color, slightly bloody, and deposits a thick, whitish purulent layer, which does not adhere to the sides of the vessel. No pain in the hypogastric region; a feeling of weight and uneasiness along the course of the spermatic cord and the left testicle. Ordered four cups to be applied to the painful region; milk-whey for drink, and a milk nourishment.

Oct. 31st. The cups drew considerable blood; the fever is somewhat abated, the tremors and agitation has disappeared, pain is less, but the urine remains purulent. Deposit large, but hypogastric region free from pain. Appetite not impaired. Apply twenty leeches to the anus; continue the whey; milk nourishment.

Nov. 1st. General condition improved; the fever and nervous irritation have ceased. Urine always voided at natural intervals; renal pain still continues. Apply three cups to the painful part.

3d. Not only the lancinating but the fixed pain, which existed before the application of the last cups, has disappeared. Urine is still a little cloudy, but the deposit has nearly ceased.

8th. Continues to improve; no pain in kidney; no fever. The discharge has not reappeared, and there is no pain in the region of the bladder; general condition perfect. Allow a little chicken.

11th. Pain has not returned; pulse and appetite are good; no agitation; urine limpid; patient convalescent.

I repeat that this case is remarkable, as showing the intimate connexion between blennorrhagia and nephritis. The reader will not fail to note the following circumstances: 1st. The extraordinary quantity of purulent matter found at the bottom of the vessel. 2. The absence of pain in the hypogastric region. 3d. The power which the patient had of retaining his urine, the same as in perfect health. The two last-named circumstances go to prove that the bladder remained unaffected during the existence of the nephritis, for when the cavity of this organ is inflamed the urine cannot be long retained, and great expulsive efforts are made to discharge it; thence the continual tenesmus; again, pain is felt in the region of the bladder. In this patient none of these symptoms were experienced. Was it owing to a sudden metastasis of the blennorrhagia? Had it, as it were, leaped over the bladder, as we see it pass from one testicle to the other, without involving the intermediate points? It is true that after the night of debauchery already mentioned, there had been a severe exasperation of the urethritis and the cystitis. But during the development of the nephritis, the bladder remained unaffected, and yet the urine was decidedly purulent. The patient suffered no vesical tenesmus; the disposition to urinate was no more frequent than in a state of health. To many of my readers the question may suggest itself whether the more serious inflammation may not have obscured the lesser one, and the cystitis been thus masked by the nephritis, thus affording some grounds for the observation made by Valsalva after the autopsy of Chevalier detailed in the letter of Morgagni, to which we have already alluded. "Valsalva thought that this dissection was calculated to make us cautious when called to treat affections which are referred to the urinary organs, because very frequently, even when we exercise the greatest care, we may commit an error in diagnosis as was the fact in this case."* Thus, in the instance to which Valsalva refers, they expected to find traces of a cystitis, but they were wanting. In my patient I might indeed have committed the opposite error. That which should console me is the success which I attribute to the two applications of the cups in the region of the kidney, the part supposed to be affected, and to the use of leeches in large numbers about the anus. These local depletions were quite copious, and

* *Letter*, xlii. § 3.

accorded with my wishes, notwithstanding the apparent debility of the subject, his pallid countenance and slender figure. Practitioners know that in severe inflammations of the urinary organs, the abstraction of blood is indicated, and the more deeply the organ affected is situated, the more frequent and copious should this depletion be made. Whilst writing this, a patient is admitted under my care, who had been treated by my predecessor, M. Cullerier. This patient was affected with a blennorrhagia, and M. Cullerier gave him three doses of powdered cubebs which he took at once. The discharge was suddenly suppressed, and he suffered acute pain in the region of the kidneys. The numerous cicatrices of incisions made by the scarifier, satisfies me that the above symptoms were followed by important morbid phenomena, and for which M. Cullerier had the cups applied.*

BLENNORRHAGIC OPHTHALMIA.

This form of ophthalmia, one of the most serious accidents of blennorrhagia, which is so frequent, and which gives rise to theoretical and practical questions of the highest importance, is nevertheless passed over in silence by Hunter!

Causes.—It necessarily depends on a blennorrhagia. Its development has been differently explained: metastasis, inoculation, general infection and sympathy have all in turn been accused. Saint-Yves was among the first to defend the doctrine of a metastasis, a doctrine which emanated from the absolute reign of humorism. Under that of exclusive solidism this doctrine was completely abandoned. This was an error. Sanson, who denied the doctrine of a metastasis, is said to have frequently observed this affection, and the urethral discharge was never suppressed when the eye became involved. Further still, this ophthalmia has been observed in subjects who never had a blennorrhagia, but who had been brought in contact with persons so affected; they washed their eyes with a sponge wet with the blennorrhagic discharge, or they had used a collyrium of the urine of persons affected with the disease. These facts favor the idea of a contagion. But facts do not warrant us in asserting that this ophthalmia is always thus produced. For my own part, without denying the doctrine of contagion, I am a decided advocate of that of metastasis. The following are my reasons:—1st. In almost all the cases observed in my wards at the *Hôpital du Midi*, this ophthalmia has co-existed with a blennorrhagic arthritis: now, this arthritis was certainly not caused by contagion, but, without doubt, by a transfer of the irritation or humor. Why should this not be the case in blennorrhagic ophthalmia? 2d. The number of these affections bears a very small proportion relatively to the number of cases of blennorrhagia, and of individuals who are careless of their persons. 3d. Besides, when the fingers are brought into contact with the

* *Extrait des Annales de la Chirurgie*, t. vi.

eyes, the latter are covered by the eyelids, and the conjunctiva is not directly touched; for, to do this, it would be necessary to depress the lower eye-lid, as the lids close instinctively, and we know that it is on the internal surface of the lids that this form of ophthalmia commences—in other words, at a point least liable to be contaminated by contact with the fingers. 4th. This ophthalmia occurs during the decline of a blennorrhagia, at a period of the disease when the contagious properties of the muco-pus is diminished. 5th. Why is it that the discharge of blennorrhagia inoculates the eyes, whilst the pus from a chancre never inoculates? Indeed, patients may be daily seen at the *Hôpital du Midi* with chancres in full suppuration, and buboes, the discharges of which soil all their garments, who are very negligent in their persons, and constantly applying their hands to their face, and yet they have never contracted purulent ophthalmia, even when the pus from the chancre on the penis would inoculate the smallest leech-bite, the scrotum, the perineum, and the unabraded skin. 6th. The patients whom I have seen affected with blennorrhagic ophthalmia were precisely those who best understood the importance of care and cleanliness under the circumstances in which they were placed. I will even add, that some of these patients were suffering from a second attack of blennorrhagia, which, like the first, was followed by a purulent ophthalmia. They were, at the time, duly warned of the danger of applying their fingers to their eyes, and yet they became inoculated!

The doctrine which attributes an important part in the production of these ophthalmias to sympathy, has found many advocates among the solidists. Sanson, without being absolute, adopted this opinion, and presented, in their strongest light, the arguments and facts in its support. He maintained, that the sympathy between the mucous membrane of the urethra and that of the eye, is proved by the feeling of smarting in the latter organ, and the impaired vision which follows every protracted irritation of the genital organs. "It is known, strictly speaking," says Sanson, "that a current of cold air, under these circumstances, coming in contact with the conjunctiva, may determine an irritation, which, in a sound individual, would become purely catarrhal, and which, in a person affected with blennorrhagia, may take a more serious character. However," continues this surgeon, with much reason, "this explanation does not fully satisfy the mind. All that is positively known on this subject, is, that in the individuals in question, conjunctivitis may assume certain forms which it does not in others."

Sanson's opinion may be reconciled with that to which I am myself inclined. I believe that, in the majority of cases, the purulent ophthalmia, which, after an attack of blennorrhagia, follows a certain course, is an accident which is analagous to the arthritis which occurs under the same circumstances. The blennorrhagic virus is transported by the blood or otherwise, and it is not to the topical action of the muco-pus of the urethra that this unfortunate occurrence, called blennorrhagic ophthalmia, is to be attributed. However, that atmospheric influences should be taken into consid-

eration, that the patient would have escaped an attack of ophthalmia if he had not been exposed to a current of cold air, is possible, as it is probable that of those affected with blennorrhagic arthritis, some would not have suffered had they guarded against atmospheric changes. This influence of a general cause allies the blennorrhagic to the Egyptian ophthalmia, to that of infants, in the production of which atmospheric influences exert so important a part. But it should likewise be known, that blennorrhagic ophthalmia sometimes occurs under hygienic circumstances most favorable to the healthy exercise of the functions of the eye, where we are unable to trace the slightest cause, as is sometimes the case with blennorrhagic orchitis and arthritis.

Symptoms.—The redness is here more decided than in any other variety of ophthalmia; it is a scarlet of the deepest dye, from which it changes to a brownish red. The tumefaction also attains its maximum. Chemosis exists in its worst form; the excessively tergid mucous lining of the eye-lids constitutes a hernia, and there is a kind of acute ectropion, which separates the celiary margins of the lids. According to M. Desmarres, the hernia of the lining membrane is sometimes strangulated by the orbicularis palpebrarum; this skillful oculist then compares it to the rectum strangulated by the sphincter ani. The swelling involves even the skin of the eye-lids; which are so tumefied as to give to the orbit the aspect which is pathognomonic to those practitioners who are familiar with this form of ophthalmia. The superior falls over the inferior lid, and the two are, as it were, imbricated. The discharge, always copious in the specific forms of ophthalmia, is still more abundant in this. It is said that it comes principally from the upper lid; it is, indeed, especially along its free border, that we see the secretion escape. This fact authorizes us in believing that the Meibomian glands play an important part in its production. This discharge is at first bloody and thin, it afterwards becomes thick and greenish, and perfectly resembles that of blennorrhagia; it stains the linen in the same manner; at last it becomes white and of a creamy consistence; and its contact excoriates the skin of the cheeks. The pain is very severe, extensive, and burning, it is felt on the forehead when it is dull and heavy. It is throbbing, and extends to the temporal and occipital regions.

With such a *chemosis*, and so severe an inflammation of the eye, we should naturally expect that the retina must suffer; and there would be a well-marked photophobia; it is, indeed, very decided, but as a general rule it soon ceases; it is always a bad omen when it disappears very suddenly, for the effusions have taken place in the interior of the eye, which have impaired the sensibility of the retina.

We find that in these cases, all the physical and physiological, the objective and subjective, symptoms of ophthalmia are manifested in their highest degree. Such is sometimes the case with the general reaction; thus, the patient is greatly agitated; there is sleeplessness, delirium and stupor; the pulse is full, the tongue furred; everything in fine is indicative of cerebral disturbance and

of real danger. However, I have observed several cases of this form of ophthalmia, where the eyes have been lost, and yet there was no general disturbance of the system.

Progress.—It may be of frightful rapidity. Here a timid practitioner, slow in deliberation, and slow in execution, will often find himself taken unawares, for six hours may suffice to prepare the way for the destruction of the eye, and to seriously compromise the whole system. Sometimes the disease is seen to progress more slowly, but it is not less serious; thus, instead of destroying the organ in a few hours it may occupy ten or twelve days.

In some instances its progress is quite insidious; for example, it may commence in a very mild manner, and preserve this character for some days; then, suddenly it reaches its maximum of intensity, and the eye will inevitably be lost. It may happen also, that the ophthalmia appears in this moderate form, and the eye, though abandoned to itself, may escape uninjured; yet it may show itself suddenly in the other eye and this be lost forever.

Terminations.—A complete, entire resolution is rare. The result is often a destruction of the eye. It is true, that in a great number of cases, but one eye is destroyed. It is evacuated in several different manners; sometimes it is by a sloughing of the cornea, which is said to arise from the strangulation, from the inflammation which has interrupted the circulation between the conjunctiva and the transparent cornea; or, the eye may be discharged by ulcerations, which commence on the surface of the cornea, become excavated, and extended thus, giving vent to the humors of the eye. One of the most serious affections following purulent ophthalmia is staphyloma. An hypopion, amaurosis, cataract, ectropion, and prolapse of the iris, may all follow this terrible ophthalmia. I have seen vegetations also after this disease; they were attached to the conjunctiva precisely in the same manner as those which are observed on the prepuce.

Prognosis.—This is grave, when the ophthalmia has not been vigorously attacked in the commencement; even then we should always be guarded in the opinion we express respecting the result of the disease.

Treatment.—Here general and local treatment, direct and indirect antiphlogistics, cauterization, all, so to speak, should be at once employed, the same day, if at its onset the disease puts on a serious aspect. Thus, I have commenced by phlebotomy in the foot, or, if the saphena does not bleed well, I take blood from the arm; I apply leeches continually to the temples, and then I administer an emeto-cathartic. Beware how time is lost in using liquid or semi-liquid collyriums, or insufflations of calomel and sugar; on all these means, invariably unsuccessful, no reliance is longer placed. The cures attributed to their employment are very questionable. Dupuytren, who so much lauded and used these insufflations, never obtained the least success. Those who visited the *Hotel Dieu* during the lifetime of this celebrated surgeon, know what importance to attach to the practice under consideration. Further, we need but peruse the cases detailed by Sanson in his article on

Ophthalmia. This surgeon, having unsuccessfully tried all the methods of treatment, resolved on resorting to a violent, but according to him, efficacious plan. He destroyed the part, the morbid secretion of which produces such disastrous effects upon the cornea. "I excised all the ocular conjunctiva and cauterized with nitrate of silver all the palpebral conjunctiva which was too adherent to be removed. I am so convinced of the efficacy of this eradication over every other method of treatment, that should I meet with a case in which the swelling of the lids was such as to render their separation impossible, I would not hesitate to divide the external commissure to facilitate their separation and the application of this method."

This excision being sometimes impracticable without the *debridement* of which Sanson speaks, and this operation be attended with real inconveniences, cauterization, with the nitrate of silver, has been employed. A blunt-ended cylinder of this salt has been carried around the circumference of the cornea, with the precaution of avoiding the centre of this membrane, lest it be disorganized. The caustic will also act upon the lining membrane of the lids, and especially the superior, which is the greatest source of the discharge. The whole interior of the lids then assumes a dark gray tint, a large quantity of pure blood is immediately lost, and a dirty reddish-brown water is discharged in a deluge. A smarting, burning sensation is immediately felt; the suffering is so severe that the patient would fall in frightful spasms, if immediate recourse were not had to the constant affusion of cold water between the lids and over the whole fronto-palpebral region.

After the excision and cauterization, M. Rognett gives tartar-emetic in large doses (twelve grs. to six oz. of water); and, according to his reports, an amendment always takes place. The next day he substitutes for the application of simple water that of D'EAU BLANCHE strongly charged (one oz. acet. plumb. to four oz. of water). It is seldom that it is necessary to repeat the cauterization. Of course every particular observed in a decided case of conjunctivitis must also be regarded in that under consideration. If the patient cannot bear the tartar emetic in large doses, M. Rognetta employs some other contra-stimulant, such as the extract of belladonna, from six to eight grs. in the day; a pill containing one gr. every two hours, with a small quantity (three grs.) of calomel; the acetate of lead, from twenty to thirty grs. in the day; a pill of two grs. every two hours; the extract of hyoscyamus in quantities from fifteen to twenty grs. in the day, &c. All these remedies in large doses act like tartar emetic; in other words, they diminish excitement; and, what is extraordinary, these enormous doses, which in a state of health would poison the person taking them in the case of a grave inflammatory affection, produce only the same effects as would the copious abstraction of blood. Those who are acquainted with the valuable experiments of Rasori and Giacomini on the true effects of these remedies, will not be surprised at the formulas above mentioned.

Tyrrel, believing that the sloughing of the cornea in cases of

purulent opthalmia, arises from the strangulation of this membrane, has proposed a kind of *debridement* of the conjunctiva which forms the chemosis. Adopting the principal of multiplied *debridements*, he incises the conjunctiva around the cornea, from which point he carries his incisions outward so as to make four radiating wounds, directly in the spaces intermediate to the recti muscles. According to Tyrrel, we thus avoid the principle nutrient vessels of the cornea. This multiplied incision is to be preferred to general excision, by which we remove all of these vessels and endanger the vitality of the cornea. Tyrrel pretends to have cured all his patients by this operation. I believe that in the majority of cases, it would be exceedingly difficult to make these incisions as he directs, and especially to make them precisely in the spaces indicated.

For my own part, I at first resort to one or more general abstractions of blood, with local depletion, according to the constitution and age of the patient; immediately afterwards I administer an emetic, and then cauterize the ocular conjunctiva, the whole being done the same day. On the following, prescribe a cathartic, which is to be repeated every second day.

BLENNORRHAGIC ARTHRITIS.

During the progress of blennorrhagia, it is quite common to observe this accident, and yet, up to the time of Swediaur, authors passed it in silence. Swediaur himself does not devote more than a page and a half to its consideration. It is probable that this affection was at that time regarded as ordinary rheumatism, which was merely coincident with the blennorrhagia. But as it has been proved that certain patients never suffer except when affected with blennorrhagia, the connection between the two diseases has been established, and a blennorrhagic arthritis or rheumatism has been admitted and described.

Causes.—A blennorrhagic urethritis is regarded as the specific cause of the disease in question. Doctors Jarjavay and Foucart admit that balano-posthitis may, like urethritis, give rise to it, but this must be an exception to the general rule.

Men are more frequently affected than women. Almost all the subjects which I have treated have been emaciated, pale and debilitated, and about thirty years of age; several have had relapses on a second attack of blennorrhagia.

Cold and violent exercise may exert an influence in the production of this disease; and they may then be regarded as occasional causes.

Great importance has been attached to the suppression of the discharge, and then its development has been attributed to a metastasis. The direct and indirect anti-blennorrhagics have then been accused. But the discharge sometimes ceases without any treatment, and yet this arthritis has been seen to occur during the mildest treatment, the most perfect rest, and while the patient is

observing a strict hygeine. I will add that the discharge is not always suppressed when the arthritis appears; it is often slight, for the reason that the articular affection is generally observed during the decline of a blennorrhagia, when it has already existed several weeks or months. It never occurs during the first week of the latter disease. On this account, however, we should not deny the influence of the arthritis on the quantity of the discharge, nor a metastasis, for there can be no doubt, that after the arthritis is cured, the discharge often becomes more abundant than during the existence of the articular disease. As regards the metastasis, without wishing to enter here into the discussions to which this doctrine has given rise, I will remark, that by this term I do not understand a displacement, a conveyance of the humor of a blennorrhagia itself, but the displacement of the cause of this humor. Thus, in the arthritis in question, it is not the muco-pus from the urethra which is carried to the articulations, but the cause which produces it, the blennorrhagic cause which invades this same articulation.

Dr. Foucart, who has written an excellent work on blennorrhagic arthritis, has given the following summary of propositions on the connection of the arthritis with the discharge:

"1. When the discharge has been suppressed before the appearance of the arthritis, the latter then depends either on a metastasis, or the cause which gave rise to the suppression.

2. When the discharge still continues, and the development of the rheumatism is determined by an occasional appreciable cause; such as cold, contusions, excessive fatigue, the blennorrhagic discharge then acts only as a predisposing cause.

3. When, in fine, the discharge exists, and there is no other appreciable determining cause of the arthritis than the blennorrhagia.

4. Sometimes, in the two cases last mentioned, the suppression of the discharge is consecutive to the development of the rheumatism, the latter being very severe. It does not then depend upon a metastasis, but simply a revulsion produced by a more intense inflammation in the part secondarily, than in that which is primarily affected.*

Seat.—Swediaur noticed the fact that the knee is the articulation most frequently affected. True, he mentions the *calcaneum*, by which term he probably intended the ankle joint. (I know not why M. Gilbert persists in using this term.) Generally it is really the knee joint, and a single knee, that is affected. M. I. Cloquet thinks that in women, he has more frequently observed the disease in the coxo-femoral articulation, an opinion which has not been corroborated by any other author. Further, we find this form of arthritis involving all the joints, several being simultaneously or consecutively affected. There is in my wards at the *Hôpital du Midi*, a young man affected with an arthritis in the articulation of the first phalanx of the index finger with the corresponding metacarpal

* Foucart, *Gazette des Hôpitaux*, 1846, p. 192.

bone, and very near to this patient, is another in which the disease is seated in the wrist-joint. M. Reynard, surgeon in chief of the Marine, has treated a student in whom all the joints, both of the upper and lower extremities, were successively involved.* But when several of the joints are attacked, there is always one in particular which remains the longest affected, and which becomes the seat of serious accidents, leading sometimes to other changes, by which the arthritis becomes transformed into a white swelling. Sometimes it happens even that only a pain more or less deeply seated is felt in the other articulations, the movements of which are sometimes impaired.

Symptoms.—Generally the pain and swelling are the first symptoms which manifest themselves. Sometimes, however, these are preceded by chills and fever, and by vague wandering pains. The pain is less severe than in the other varieties of acute arthritis, such as the ordinary rheumatic, the traumatic, or that caused by the penetration of a tubercle in the articulation. [Some two years since we treated a patient affected with blennorrhagic rheumatism in the ankle joint, and the pain was more severe than ever occurred in any form of articular disease which has come under our observation.—G. C. B.] The movements of the joint are impeded, or rendered even impossible; like pressure with the fingers motion increases the pain, but to a less extent than in the form of arthritis which I shall mention. The swelling is sudden and sometimes considerable. We may perceive that this tumefaction does not depend upon an enlargement of the bone, nor a swelling of the soft parts surrounding it. It arises from an effusion within the joint, an hydarthrosis, which may easily be detected, when the knee is the joint affected. The patella, indeed, is raised and separated from the femur and the tibia; it is movable and as it were floating. On the sides of this little bone, instead of two depressions, are two more or less marked elevations. If we press upon one, we depress it, but raise the other; we may press the fluid from one to the other side, we may in fine produce fluctuation.

The color of the skin remains generally unchanged, and its temperature is natural. The absence of the external characters of inflammation, at the outset of the disease, is a fact so constant, that when the opposite occurs, we should carefully examine to see if indeed it is a blennorrhagic arthritis, or if some complication has not given an acute character to an affection at first subacute. At a later period, as the articular affection progresses, it is characterized by really inflammatory phenomena. The swelling is more tense, the skin hotter and more highly colored, and the vascularity around the joint is increased as in acute rheumatism. The urethral discharge then ordinarily undergoes a marked diminution, a circumstance which does not occur, when the disease remains in a state of hydarthrosis.

As we generally find that the blennorrhagic arthritis commences without any previous fever, we also frequently observe apyrexia

* *Traite pratique des maladies vénériennes*, p. 204.

throughout the whole progress of the disease. But fever may supervene, though it existed not at the commencement. In every instance, even when the inflammation is most decided, the febrile excitement bears no comparison with the intensity of the rheumatism.

The disease at the beginning having some characteristics of chronic affections, we need not be astonished to see it protracted for months at least, by one of its elements—the effusion into the synovial cavity. But in ordinary, uncomplicated cases, and under the influence of well-directed treatment, the affection subsides in from three to six weeks. It is not uncommon for a certain quantity of the effused fluid to remain in the synovial cavity. We sometimes see the disease pass from one joint to the other, or give way to a blennorrhagic ophthalmia. It is much more rare to observe purulent synovitis, but the fact of its occasional occurrence is unquestionable, a circumstance not observed in ordinary rheumatism, in which, indeed, we know that more than one pathologist will not admit the occurrence of suppuration. But, even in blennorrhagic arthritis, under particular circumstances, some complication may aggravate the inflammation until it reaches the stage of suppuration. Moreover, I had an opportunity of witnessing this accident while attached to the *Lourcine*. The patient had been guilty of no imprudence, he was quiet, and had submitted to no injurious treatment, yet he was attacked with an inflammation of the knee which terminated in abscesses which I was obliged to open. He had in fact a white swelling, which I had the good fortune to cure, but at the expense of a complete anchylosis.

Diagnosis.—We must not confound with blennorrhagic arthritis, the rheumatic pains which a patient suffers while laboring under syphilis. The latter are intermittent, nocturnal, and are aggravated by the warmth of a bed; they are relieved by, and even disappear under, the influence of cold, and of motion, and are not increased by pressure. As in blennorrhagic arthritis, several joints may be involved, and as ordinary rheumatism may like it assume a chronic form; the disease in question is liable to be confounded with the rheumatism which merely coincides with, but has no dependence on, a blennorrhagia. What I have stated concerning the suppression or the diminution of the discharge when the joints become affected, does not corroborate the opinion of those who pretend from this circumstance to form an opinion of the nature of the disease. The discharge, indeed, may not be changed by the occurrence of the urethritis, as it occurs most frequently at a period when the former is so slight, that the articulations become involved.

Thus, there are cases in which the diagnosis is difficult, a fact, however, of no great importance in a therapeutical point of view.

In the majority of cases, in which the disease is well marked, the diagnosis is easily established. For example, if during the progress or decline of a blennorrhagia, we observe an affection of a single joint, supervening suddenly, and without any apparent

cause, especially if it be seated in the knee joint, if there is neither severe pain, discoloration, nor heat of the skin, and if there is no fever, we may affirm that the disease is a blennorrhagic arthritis; we may be still more certain, if during a previous attack of blennorrhagia, the patient suffered from the same accident.

Treatment.—Those who believe in the general idea of metastatis, have recommended the re-establishment of the discharge. For this purpose they have irritated the urethra with bougies, and have even inoculated it with muco-pus borrowed from another patient. In the *Bibliothèque medicale** a case is recorded by Dr. Yvan, which seems favorable to this practice, not yet, as it deserves to be, abandoned.

Swediaur applied his treatment directly to the articulation, and made use of only mild, diluent drinks internally. His local treatment consisted of frictions with ammoniacal liniment, and especially with an ointment into the composition of which entered the gum-resin ammoniacum, dissolved in the vinegar of squills.

My own treatment consists in the application of from twenty to thirty leeches over the skin nearest to the synovial membrane. The patient must be feeble, indeed, if I abstain from their use in the onset of the disease, for I have observed that the cure is much more rapid and complete, when blood has been abstracted. The indications for blood-letting are much more positive when the disease assumes the decidedly inflammatory form, especially when there is reason to apprehend suppuration; in such a case general should precede the local abstraction of blood. Afterwards, I apply a large camphorated blister; this is not kept constantly open, but is renewed when we wish for a length of time to maintain counter-irritation. If fluid still remain in the articulation, and the swelling continue, which is very frequently the case, I employ compression by means of narrow imbricated bands of plaster. Sometimes I have applied the dextrine immovable apparatus as in cases of fracture. The patient is then not generally condemned to preserve absolute repose. Constipation should be obviated by saline purgatives, the nitrate (sulphate) of magnesia, or Seidlitz water. M. Ricord gives daily from two to four drachms of nitrate of potass, and from one to two drachms of tincture of colchicum in a tisane of borage. I seldom use liniments or pommades. However, in a case where the synovial membrane was actively inflamed, I gave wonderful relief by the application of large quantities of mercurial ointment. In such a case the ointment should be extensively applied as it sometimes is in the treatment of peritonitis. But if we continue its application for a length of time, salivation occurs, which is occasionally a serious annoyance.

M. Velpeau employs the mercurial ointment, but in a milder form, and combines it with a little extract of opium. The same surgeon also administers an alterative powder, according to the following formula:

* T. xii. p. 116.

℞. Calomel, grs. 5.
Ipecac. " 8.
Rhei, " 12.

Divide in six powders. Give from two to six in the day. The object is not to excite vomiting, but to maintain a state of constant nausea.

When the articular inflammation has yielded, and the effusion is nearly absorbed, we generally find that the discharge from the urethra reappears; then only do I resort to the use of antiblennorrhagics. I believe that they are entirely useless at any other period of the disease; that is, when it truly exists, and their use is not unattended with inconveniences.

SECTION II.

BALANO-PREPUTIAL BLENNORRHAGIA.

This is also called *bastard chaudepisse, or* external blennorrhagia, (Desruelles); and *balano-posthitis.* It consists in a kind of inflammation of the prepuce and glans, with or without erosions. When the disease is confined to the mucous membrane covering the glans, it constitutes *balanitis;* if the prepuce alone is involved, it is then called *posthitis.** This disease, which possesses much interest in a practical point of view, has been much neglected by almost every syphilographer. Astruc and Hunter form exceptions to these remarks; yet their account of it was very incomplete. MM. Desruelles (*Traité des maladies vénériennes*) and de Castelneau (*Annales des maladies de la peau et de la syphilis*, t. ii.) have carefully studied this affection in its different forms, and their writings may be perused with profit.

External blennorrhagia is of frequent occurrence, it being found in about one of every thirty admitted into the venereal wards. This number should be still higher, and should exceed that of urethral blennorrhagia, considering that the prepuce and glans are brought more directly into contact with the contagious matter and the parts affected.

Causes.—It is evident that phymosis more or less decided constitutes a favorable predisposition; the importance of this condition in favoring the development of this disease, however, should not be so exaggerated as to deny the possibility of the existence of it, except in those whose prepuce is long and narrow, for it does occur when the opposite condition obtains, when the glans is uncovered, and when the prepuce may be easily retracted. I have observed it in a subject on whom I operated for phimosis by circumcision. There is one circumstance which has caused the ad-

* For the sake of brevity, I shall often use the term *balanitis*, no matter what the seat of the inflammation.

mission in the etiology of this affection of too many cases of phimosis, and that is, that no distinction is made between that which is congenital and that which is acquired; the effect has here been mistaken for the cause; thus, in the case of a prepuce a little longer than natural, a balano-posthitis becomes developed, the prepuce swells, becomes elongated, the mucous membrane is turgid, its opening contracted; in fine, accidental phimosis is established; it is now regarded as a congenital phimosis, especially if the patient be not questioned about the state of the parts before the invasion of the disease. Balano-posthitis is certainly observed most frequently at adult age. However, at both extremes of life this affection is not very rare. Children have sometimes a discharge from the penis, arising from an inflammation of the lining membrane of the prepuce. During my direction of the wards for nurses at the *Lourcine*, I operated on a nursling affected with numerous adhesions between the prepuce and the glans, which led to the suspicion of a balanitis during the period of intra-uterine life. In old men, balanitis is generally complicated with eczematous eruptions.

The syphilitic virus, directly applied, or acting through a contamination of the system, is unquestionably the most common cause of balano-posthitis, whence it may be both primary and consecutive. Next to the venereal virus must be placed the dartrous vice. A physical agent, the too frequent excitation from masturbation, coïtus, want of cleanliness, the contact of the discharge of leucorrhœa, the menstrual fluid, cancerous ichor, all these causes may inflame the mucous membrane of the prepuce and the glans. The other affections of this membrane, such as herpes, eczema, vegetations, and chancres, are often connected with more or less catarrhal inflammation, and it is known, that muco-pus, in issuing from the urethra, may, even on the same subject, give rise to a balano-posthitis. Among the causes of this disease, the agency of foreign bodies must not be forgotten. The most common of these are urinary calculi, and other concretions, arising from the secretion of the mucous follicles, which has been allowed to accumulate within a narrow prepuce by those who are negligent of their persons.

Symptoms and Progress.—The first symptoms of this disease are generally observed two or three days after a suspected coïtus. At the onset there are pruritus and heat; these are followed by a smarting sensation, and finally there appears at the preputial opening, a certain quantity of muco-purulent matter. If we uncover the glans, and examine the whole mucous membrane, we find that its color is increased, the redness being more marked on the glans than on the prepuce. Sometimes the color of a portion only of this membrane is changed, either on the prepuce or the glans. The epithelium often exfoliates and deliquesces, and the denuded, unpolished, mucous membrane, then appears of a deeper red color; it is an erosion, an exulceration, or a *blistered surface*, such as is frequently observed on the neck of the uterus, and on the os tincæ. The mucous membrane itself may be destroyed,

Fig. 1.

Fig. 2.

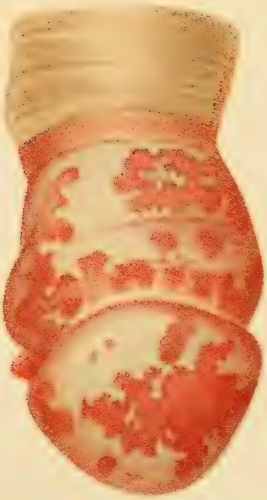


Fig. 1. *Acute posthitis with superficial ulceration*

Fig. 2. *Chronic balano-posthitis with superficial ulceration*

and a true ulcer be formed. Whatever may be the loss of substance, it is not preceded by any vesicle or pustule.

The two forms, the exulcerative and the ulcerative, may occur isolated on the lining membrane of the glans or prepuce, or conjointly on both surfaces. I have actually before me a young man of a lymphatic temperament, in whom the whole mucous lining of the prepuce has *exulcerated*, whilst not even the color of that covering the glans is changed. Plate 1st, Fig. 1st, represents the inflammation which is limited to the prepuce. The patient was 28 years of age, a baker by trade, and of a lymphatic temperament. He was admitted March 1st, 1852, into Ward No. 9, Bed No. 9. No venereal affection had preceded the attack. Fifteen days before his admission, he had connection with a female. Eight days afterwards, he discovered a tumefaction of the prepuce, and there was difficulty in uncovering the glans. Pruritus, and a light pain, existed at the extremity of the penis. At the time of his admission (March 1st), I found the prepuce slightly swollen. There was some difficulty in exposing the glans. The internal face of the prepuce is of a fine red color, and slightly turgid; it is excoriated, and denuded like a blistered surface; on this reddened base, at different points, are whitish spots, consisting of epithelium slightly raised, but not yet detached. The glans is perfectly sound. Neither pain nor itching is felt at this part; there is a slight discharge between the prepuce and the glans. No discharge from the urethra; the inguinal glands are not enlarged. Until the 4th March, the patient applied only emollient lotions to the parts affected. It presents the same aspect. March 5th. Apply nitrate of silver lotions (three grs. to six oz. of water); the surface becomes paler; no pain, and scarcely a *weeping* between the prepuce and the glans. The lotions are continued until the 10th of March, at which period the cure is complete. The patient asks for his discharge.

I have given this case in detail, because it is one of the most perfect examples of the localization of an inflammation of the mucous lining of the prepuce, and as it is one of the lightest forms of excoriation. The cure, as we have seen, was very rapid.

Most generally we find that the excoriation occurs both on the mucous membrane of the prepuce, and the glans; and it is particularly upon the latter that it is most extensive and decided. The *exulceration* is always multiple; sometimes its limits are not perfectly defined, and it is then difficult to distinguish it from a simple redness. The *erosions* are most frequently observed upon the glans; they are of an irregular shape, and have a tendency rather to the circular form. Their dimensions range from two to six lines; when of larger size, it is owing to the fact that several have coalesced to form but one. The color of the eroded surface is of a deep or vinous red, rarely blended with gray, and more rarely still of a perfectly gray color, as is seen in the common chancre. I have already compared the erosion to a blistered surface; but, whilst in the latter there is almost always a pseudo-membraneous formation, this is a rare occurrence in the erosion

of the balano-preputial mucous membrane. Around the erosion, the color of the glans is of a lively red, often analogous to that in the *exulceration*, and when the limits of the latter are not clearly defined, the denuded portion may be confounded with that which is not. But it must be admitted, that on the glans this confusion is more difficult than on the neck of the uterus. If it be desired to make a precise diagnosis, we pass a pair of forceps soaked in a solution of nitrate of silver, which will render the eroded surface whiter than the polished mucous membrane. In the instances of consecutive balanitis, the parts of the glans not eroded retain their natural color.

The matter secreted by a balanitis is at first small in quantity, and resembles muddy mucilage, after which it assumes the characters of muco-pus, and even of pus itself; like the urethral blennorrhagia, it becomes of a yellow, greenish, and sometimes rusty tint; it has an odor like that from spoiled fish. This discharge is sometimes very abundant, and then, if the prepuce is very narrow, its passage through the preputial opening is obstructed, it may accumulate in the groove below the glands, and produce towards the base of this organ a kind of abscess, the evacuation of which may require a perforation of the prepuce. Sometimes the quantity of matter secreted is very small; in chronic cases, when we expose the glans, we discover a thin crust formed over the eroded surfaces, which falls off to make room for others.

The progress of balano-preputial blennorrhagia is generally rapid, and it soon becomes healed, even when there are exulceration and superficial ulceration. Cleanliness, the most simple topical applications, singularly promote and hasten this happy termination, which sometimes happens in the course of four or five days. But this does not occur when complications exist, and when the cause cannot be removed.

The first case detailed below affords an example of one of the most simple acute cases. In the second, not only the glans and prepuce were affected, but this had been preceded by an urethritis which was followed by a vegetation. It is evident that the balano-posthitis was chronic; I regarded it as consecutive.

G. L., æt 19, shoemaker, of lymphatic temperament, good constitution, was admitted March 15th, 1852, into Ward No. 11, bed No. 31, of the *Hôpital du Midi*.

Nine months and eight days before his admission, after connection with a prostitute, he was attached with a slight urethral discharge, accompanied with slight pains during the emission of urine. This condition lasted six months. No treatment. At this period, and without any apparent cause, the prepuce became swollen, red, and painful; the glans could no longer be uncovered. A very copious discharge was formed between the prepuce and the glans. Ordered local baths. Regimen and tisanes for eight days. There was scarcely any discharge from the urethra. The prepuce being no longer swollen he could expose the glans, the surfaces of both prepuce and glans are only a little reddened. He returned to his accustomed habits, drinking, &c.; fifteen days afterwards, the ure-

thral discharge reappeared; the prepuce became again swollen, and there was a renewal of the phimosis. (The patient has been continent since the coïtus before mentioned.) In this condition he remained until admitted into the hospital, (March 15th.)

15th. Some difficulty in uncovering the glans. The prepuce somewhat swollen; its lining membrane red, granulated, and bleeding from the slightest cause; the color of the glans is of a bluish gray; it presents broad layers of a slightly brownish red; these are excoriations which bleed occasionally. Discharge slight, thick, and of a greenish yellow color between the prepuce and the glans; *weeping* from the meatus; no pain. On exposing the glans, in the groove around it, on the right side and near the frenum, is found a vegetation of a deep red color. The inguinal glands are more engorged on the right than on the left side, but they are not painful. The patient did not discover them; he remembers, besides, that in his childhood he had enlarged glands in the neck. The cervical ganglia are now normal. Bath.

16th. A sketch is made of the penis; it is represented in Plate I. Fig. 2. The glans is excoriated, together with the prepuce; the latter being somewhat narrow forms a kind of ligature around the base of the penis. The redness at the base of the excoriations is less brilliant than that in Fig. 1; it is slightly brownish.

17th. The prepuce, which yesterday was drawn behind the glans, is greatly swollen. Its surface, with that of the groove, has lost, in consequence of their isolation, the tint which they possessed yesterday. Prescribed lotions of nitrate of silver of the strength mentioned in the preceding case.

18th. The parts have assumed a brownish color; here and there some reddish points remained. Discharge has increased.

19th. Bath. The parts appear perfectly sound. The vegetation is shrivelled and detached, from the effects of the application of a powder composed of equal parts of savine and burnt alum.

29th. No traces of the vegetation. Patient now takes Dupuytren's pills; there is still a slight weeping from the canal.*

Complications.—The phimosis, which is a cause of balanitis, may become a complication, by obstructing the discharge of the matter secreted, and by resisting the development of the glans, which occasionally gives rise to a strangulation and sloughing of the prepuce; it is owing to this complication particularly, that balanoposthitis becomes very painful. Again, the inflammation may not be confined to the mucous lining of the preputial cavity; it may involve the glans, and the cellular membrane between the mucous lining and the skin, and even the skin itself, causing it to assume a phlegmonous character. Two sets of vessels are distributed between the skin and lining membranes of the prepuce; viz. veins and lymphatics, and these become inflamed. According to M. Desruelles, phlebitis is a much more frequent complication than inflammation of the lymphatics. The reverse of this is true. But it must be admitted, that before the investigations of this physician,

* Case reported by M. Codet, *interne du service.*

the attention of observers was not so strongly fixed upon the inflammation of the principal veins of the penis, and of the capillary veins, an inflammation which gives at once a serious character to balano-posthitis.

When all these anatomical elements of the prepuce become invaded, the extremity of the penis becomes increased in size; it assumes the form of a club, it becomes red, and then changes to a violet color. If the prepuce is long, we find it twisted at its extremity, and narrow, and appears as if pediculated at a point corresponding to the glans; it is more developed anteriorly, and there is occasionally a hernia of the mucous membrane. Then we may have not only a retention of the matter secreted, but a retention of urine, which, however, is much more rare. This complication has more than once rendered it necessary to divide the prepuce, notwithstanding the risk incurred by this proceeding of inoculating the wound.

Blennorrhagia, chancre, and buboes are often rather consequences than true complications of the disease. Chancre is more frequently observed than blennorrhagia; bubo, resulting from the latter affection, is very rare, and as we shall hereafter find, it may become virulent. The vegetations and mucous tubercles which may give rise to balanitis, are also sometimes consequences of this affection. (In Plate I. Fig. 2, a vegetation is represented.) Thus, it is common to see numerous vegetations arise from the reflexion of the prepuce lately occupied by an erosion, or blennorrhagic inflammation. Orchitis has improperly been regarded as a complication or one of the accidents of balano-posthitis.

Terminations.—The most frequent is resolution, or prompt recovery, if the complications are removed, if the causes no longer exist, and if the disease has not been aggravated by improper treatment. When balanitis is consecutive, the duration of the disease is considerably increased, or it may be reproduced. When it arises from eczema, as is often the case in old men, it may be very obstinate.

Diagnosis.—When the prepuce is narrow, balanitis may be confounded with urethritis, for both inflammations may cause the same matter to be secreted, the same muco-pus. But the emission of urine is generally not modified, or is not more frequent than usual in balanitis; the pain is limited to the glans; the discharge is as copious before as after urinating; and erections are not common. In urethritis, the pain at length always extends to several points in the urethra; those which are felt in urinating are especially referred to the perineum; there is more frequent disposition to urinate, and by pressing the urethra from the scrotum towards the glans, we considerably augment the quantity of matter which escapes from the prepuce.

Chancre of the preputial cavity may simulate balanitis, but generally it furnishes less matter than the latter, and by carefully feeling, we may often detect an induration which reveals chancrous ulceration. When the glans can be exposed, other difficulties may still exist. Thus simple excoriations may be confounded with the

truly specific exulceration, the primary exulceration to which the former are consecutive. Simple excoriations are ordinarily less extensive, very irregular, and of a fine red color; their secretion is small in quantity; on evaporation, crusts and yellowish pellicles are formed, and the vicinity of the glans is colored and irritated to an extraordinary degree. The consecutive erosions are of a rounder form; the pellicle by which they are covered falls off readily in the form of scales, leaving behind a gloss of a reddish brown tint (syphilitic tint). It is rare that there are not associated with these some of the syphilitic eruptions. Eczema, also, leaves excoriations which may be confounded with those of true balanitis, but they are preceded or followed by little vesicles; the itching is troublesome, and the affection is often seen on other parts of the integuments.

Prognosis.—This may be inferred from what I have stated concerning the terminations. Like the local affection, this is most benign when uncomplicated, but, even when it exists in its mildest form, that which is regarded as simply catarrhal, it may be the starting point of syphilitic infection.

Nature.—The same diversity of opinion here prevails as in reference to the nature of urethral blennorrhagia. But, as the parts affected may here be directly explored, in the majority of cases, and as the chancre *larvé* cannot conceal the truth, the latter may be obtained both by clinical and experimental observation. Experience, indeed, has shown that balanitis, in both its forms, that is, without and with erosions, has been followed by consecutive accidents, which revealed the existence of constitutional infection. Experiments have corroborated these remarks; that is, they have established the fact, that the matter secreted in a mucous balanoposthitis may be successfully inoculated, and that, too, when there is no ulceration, nor the slightest erosion, or solution of continuity in the mucous membrane.

Clinical facts could not be denied; they, however, have been explained in a manner different from our own. The experimental facts have simply been denied. These facts, however, occurred at the *Hôpital du Midi;* they have been collected by an *interne* with whom I am acquainted, and have been inserted in his inaugural thesis. Dr. Bartholi asserts even that he has met with thirty cases of this kind. One of these is very remarkable; in a case of balanitis, without the slightest exfoliation of the mucous membrane, without any other venereal symptom, an adenitis supervened, which was treated by numerous punctures. Each puncture became transformed into a chancre. Pus taken from one of these ulcerations, and inoculated, produced what is called at the *Hôpital du Midi* the *pustule caracteristique;* in other words, that which precedes chancre. (The *Thesis* of M. Bartholi was defended at Paris, in 1845; it was on the subject of *Syphilis* and Scrofula.) I have not repeated these experiments, because the syphilitic nature of balanitis, under the form which is called simple *catarrhal*, I have never doubted, since I have been able to watch for a length of time the patients in whom it occurs.

It is, therefore, demonstrated that balano-preputial blennorrhagia, in its ulcerated and non-ulcerated forms, may be contagious, inoculable, and the cause of consecutive accidents, in the same manner as certain urethral blennorrhagias. There is this difference, however, viz., that matters here are more easily detected, since it is an external blennorrhagia, a disease which is completely under our observation. Thus, in my opinion, the history of this throws much light on the history of all other forms of blennorrhagia.

[Mr. Langston Parker (*op. cit.* p. 34,) states that in this form of disease, he has seen eruptions, accompanied by a node on the forehead, loss of the hair, and other symptoms of constitutional syphilis, produced in the wife, where this species of abrasion, with thickening, were the only symptoms in the husband.—G. C. B.]

Treatment.—I shall here point out only the local treatment, for the general or rather the specific treatment, will be taught when we come to treat of chancres. This special treatment should be adopted whenever we are not certain that the balanitis proceeds from a physical or simply irritating cause.

The local treatment may require nothing more than the observance of cleanliness, and the interposition of fine lint between the prepuce and the glans. This isolating the parts affected should be employed whenever it is possible. Nothing more prevents resolution than the contact and friction of one diseased mucous surface upon another. Instead of lint, we may use charpie, or cotton. I will soon mention with what they should be saturated. In the majority of cases, for simple water lotions, and local baths, we substitute lead water, or a solution of the nitrate of silver. The formula which I adopt has already been mentioned, while treating of blennorrhagia.

℞. Nit Argent. grs. 3.
Aq. pur. ℥ vi. M.

M. Baumés prefers;

℞. Nit. Argent. grs. viii.
Aq. pur. ℥ ii.

M. Desruelles steeps the pledgets in the following solution:

℞. Nit. Argent. gr. xv.
Aq. ℥ i.

The glans being covered with these pledgets, the prepuce is brought over it. Where it cannot be exposed, we must inject the same solution between it and the prepuce.

1. *M. Ricord's treatment.*—If he can uncover the glans, he applies a crayon of nitrate of silver over the entire diseased surface. He then covers it with fine lint, over which he pulls down the prepuce. In the next place he makes use of fomentations by means of compresses soaked in Goulard's extract. The lint is changed twice a day, and each time, the parts are washed with a weak solution of lead.

When the inflammation runs high, and the disease is complicated with natural or accidental phimosis, he employs active antiphlogistics; he applies leeches to the pubic region, to the genito-crural fold on each side, but never to the penis itself. Local baths composed of decoctions of marsh-mallow root, of linseed, with warm milk, of nightshade, or of poppy heads, may also be used, with injections between the prepuce and glans of these mild narcotics. One or two scarifications on each side of the lower part of the prepuce, when there is much œdema and but little inflammation. This trifling operation must be avoided when there is erysipelas, and leeches preferred as already indicated.

If gangrene threaten, fomentations, with a solution of the gummy extract of opium, and injections of the same fluid into the preputial cavity; internally, a grain of opium several times in the course of the twenty-four hours. The same narcotic is to be administered in lavements with eight or ten grains of camphor.

2d. *Author's treatment.*—I employ injections between the prepuce and the glans, of the strength already mentioned, and apply a crayon of nitrate of silver, over all the parts affected if they can be exposed. I have never found it necessary, however, to resort to the local abstraction of blood, nor to scarifications in cases complicated with inflammation or œdema. From this it must not be inferred that I disapprove of the practice to which I have above alluded. I wish merely to state my own. When the inflammation is very acute, the subject young and plethoric, I prefer bleeding from the arm; I repeat the general bathing, and prescribe fomentations of the decoction of nightshade, after which I cover the penis with a linseed cataplasm moistened with Goulard's extract.

Some practitioners very frequently incise the prepuce, when to a congenial or accidental phimosis there is added an inflammatory complication. Doubtless, it is often of advantage to promote the development of the inflammation as we may thus avoid gangrene. But in the preputial cavity there may be a concealed chancre when we suspect only an inflammatory balanitis; the wound may thus become inoculated, and be transformed into a large chancre, which often becomes phagedenic. I should more willingly advise incision, or better still circumcision in the case of chronic inflammation, especially when it is possible to know that it is limited to the glans. For example, a few days since, I operated on a patient in such a condition. There was incomplete phimosis, and I could assure myself that he had balanitis alone; I performed circumcision, and applied *serre-fines;* the wound was united in thirty hours, and the glans, which were very red and excoriated at the moment when it was uncovered, soon became pale; a crust formed over the excoriation, which eight days afterwards fell off and was not again renewed. There can be no doubt that in this case the contact of the lining membrane of the prepuce, with that of the glans, did protract the existence of the balanitis.

CHAPTER III.

BLENNORRHAGIA IN THE FEMALE.

The specific inflammation which I am about to describe affects several mucous tissues. The female may therefore be affected with several forms of blennorrhagia, but they are too frequently confounded to be described separately, as I did in treating of the disease in the male. I prefer to make but two varieties, which I will describe under the same head. When the vitality of the female genital organs becomes affected, certain morbid secretions take place, which have been confounded under the name of *fluor albus*, which may give rise to blennorrhagia. The female, therefore, may have a discharge which has not been contracted from another, as well as that which has been thus contracted; for this reason it has been asserted, that as regards blennorrhagia she gives more than she has received.

Seat.—Facts do not warrant us in locating the inflammation exclusively in the vulva, the vagina, or the urethra. Blennorrhagia may affect all these parts, though it more frequently commences in the vagina. This is all that can be positively asserted. It may be limited to one of the localities mentioned, or invade several at the same time, and extend over the entire mucous lining of the genital organs and urethra.

Varieties.—I make three varieties of this disease, a division based on the particular locality affected. Thus we have a vulvar variety, a vaginal, to which I will add a uterine and a urethral. In the two first named we shall find analogies with balano-preputial blennorrhagia, analogies which did not escape the observation of Hunter.

1st.—*Vulvar Blennorrhagia.*—The vulva comprises, as is well known, the clitoris and its prepuce, the vestibule, the labiæ majora and minora, the caruncules, and what is called the vulvar circle. These parts may be thought very rarely separately affected, in the majority of cases, indeed, the entire vulva being involved. The blennorrhagia may be superficial; in other words, it is simply erythematous, and limited to the mucous membrane; or both the glands and tissues invested by this membrane may be invaded by the inflammation. Even the skin adjacent to the genital organs may suffer, especially in females who are very corpulent.

Vulvar blennorrhagia is generally accompanied with very troublesome itchings, intense heat, marked redness, and tumefaction. Sometimes there are erosions as in balanitis. In many, the invasion of the disease is characterized by strong venereal desires. It is rare, however, that this kind of nymphomania continues during the whole progress of the blennorrhagia. Walking excites the parts, and renders them painful; sometimes the patient suffers whilst sitting; even when urethritis does not exist, the emission of urine is painful, especially when it is about finished, and the last drops become diffused over the inflamed vulva.

There is often, at the same time, an œdematous and inflammatory swelling, which may terminate in the obliteration of the vagina in strangulation, and a kind of paraphymosis of the nymphæ. The urethra sometimes is even compressed, which produces pain during the whole time that the urine is voided, for there is dysuria. When the inflammation reaches this height, and when it involves the skin and parts adjoining the vulva, the discharge is very acrid, and exhales a very fetid odor. The glands invested by the mucous membrane of the vulva, those in the substance of the labia, may become inflamed. When it was believed that the blennorrhagic discharge consisted entirely of semen, the seat of the affection was placed in these glands, which were regarded as reservoirs of the sperm. Thus we find in Astruc that "the prostate and Cowper's glands" are considered as the seat of blennorrhagia. As regards the female, this author states explicitly that the last-named glands "are situated in the perineum, near the anus, and that they open into the vulva by two ducts which may be found at the entrance of the vagina, near the caruncula myrtiformis."* This description evidently applies to the glandular bodies recently described by my colleague Dr. Huguier. Now then, these glands may become inflamed in like manner with the follicular bodies which are more or less deeply situated, and there vulvitis assumes a phlegmonous form; abscesses form, which if not early opened, may produce a blind fistula; that is, with an opening only in the vulva, or it may rise to a complete fistula, with an opening in the rectum very near the anus, as well as that in the vulva. Long since I described the characters of these abscesses, and pointed out the consequences which might follow. In proportion as vulvitis is more or less superficial and recent, and according to its depth and extent, it may produce a discharge which is at first mucous, which afterwards becomes muco-purulent, and finally entirely purulent. When there is suppuration of the glands, the pus secreted may present all of these characters. If the inflammation involves the adjacent skin, there oozes from its surface a humor like that produced by a blister. The fetor is then especially intolerable.

Vulvitus is very frequently observed in little girls who have a somewhat lymphatic temperament. It is manifested, in the first place, by a mucous discharge, which by degrees becomes troublesome; it may be attended with an itching sensation, and occasionally with acute pain. In the majority of cases this blennorrhagia is spontaneous; seldom is it caused by contagion.

2d. *Vaginal-uterine Blennorrhagia.*—Under this head I shall consider not only the affection limited in its seat to the vagina, but that which reaches as high as the uterus. Vaginitis is an extension of vulvitis, or, what is most common, it commences in the vagina itself. This canal may be affected throughout its entire extent, or in that portion only which lies adjacent to the vulva, or to the neck of the uterus. If the disease is confined to this last-

* *Traité des maladies vénériennes*, t. iii. p. 7.

named part, and if the discharge accumulate in this *cul-de-sac*, on a superficial examination we may pronounce a female sound when, in fact, she is the receptacle of what may readily infect whoever shall have intercourse with her. The finger should be introduced deeply into the vagina, its posterior face depressed, by which a cavity will be formed. We then perceive the matter threading its way along the finger to arrive at the vulva. It is still better, when possible, to examine carefully with the speculum the condition of the mucous-membrane as we withdraw the instrument.

The inflammation may still be here only erythematous, catarrhal, or phlegmonous, according as it is limited to the mucous surface, or as it involves the tegumentary covering and mucous follicles, a complication which renders the vaginitis very intractable. In speaking of vulvitis, I have not mentioned the phenomena which occur in the genital regions, as well as parts more remote, because they are very rare; but when vaginitis exists, it is common to hear the female complain of a feeling of weight and uneasiness in the groins, of pains in the pelvis, of general uneasiness, and of painful lassitude. The local pain is here less severe; some women indeed never suffer during the whole progress of the disease, and coïtus is attended with no disagreeable sensation; now, as they are more than ever troubled with desire, the men with whom they are intimate are much exposed to infection. The same danger does not exist in vulvitis, for no matter what the desires of the female, sexual intercourse is then so painful as to be rendered almost impossible. If the pain in vaginitis is less, the discharge, on the contrary, is more considerable than in vulvitis. An inspection of the vagina shows the lining membrane redder than in its natural state; the redness is deep and bright, and is principally remarked on the vaginal folds, which are then unusually prominent. Sometimes the surface of the vagina has the aspect of a granulating wound; then it has received the name of papulous or granular vaginitis. M. Deville believes it to be peculiar to pregnancy; true, it is most frequently observed in pregnant females, but it may also occur in those who are not in this condition.

As in the male, blennorrhagia is observed to commence in the fossa navicularis, traverse the urethra, even to its most deeply-seated parts, and then become chronic, and complicated with prostatic engorgement; so in the female, it may be seen to attack first the vulva, then pass through the vagina, and fix itself upon the *cul-de-sac*, about the neck of the uterus, which then suffers several different pathological modifications. These modifications, by the secretions to which they give rise, it may be remarked, are the most frequent cause of communicating blennorrhagia. In this chronic state, the female no longer suffers during coïtus; the disease being of long standing, she thinks that it has passed, and the morbid secretions are confounded with leucorrhœa. The blennorrhagia may even extend farther; it may pass through the neck, and involve the body of the uterus. The discharge is then more of a mucous character, and issues from the vagina in thready

masses; it has a tenacity that does not belong to it, when vaginitis alone exists.

[The sterility of prostitutes is attributed, by several authorities—as, for example, Mr. Henry J. Johnson, *op. cit.* p. 340; Mr. Egan, *op. cit.* p. 123; and Mr. Acton, *op. cit.* p. 200—to the occlusion of the uterine cavity by the tenacious, stringy mucus, secreted by the glands of Naboth, which so frequently exist in this class of persons in a state of chronic inflammation. This viscid discharge occurs also in connection with a granular state of the cervix. Young married women affected with leucorrhœa are often barren from the same cause.—G. C. B.]

There is reason for believing that the inflammation may reach the ovaries even through the Fallopian tubes, as it does the testicle through the vas deferens, at a certain period of urethral blennorrhagia in the male. When I come to treat of the accidents, I shall mention certain facts which would seem to authorize the admission of a blennorrhagic ovaritis, analagous to blennorhagic orchitis.

3. *Urethral Blennorrhagia.*—The symptoms are not unlike those of urethritis in the male. Sometimes there is a slight itching and uneasiness, which becomes changed to a real pain, and, during the emission of urine, it is of a burning character. To determine absolutely that the urethra is really the seat of the pain, we introduce the index finger into the vagina, turn its palmar face towards the pubis, and press the urethra, from the neck of the bladder towards the meatus. If urethritis exists, the band formed by the urethra in the vagina appears increased in size; it is more sensible, and the pressure gives exit to a quantity more or less considerable of muco-pus.

Accidents.—These are less numerous in the female than the male. In the latter, we may have prostatitis and epididymitis; blennorrhagic ophthalmia and arthritis are less frequently observed. Inflammation of the body, and especially of the neck of the bladder, is by no means so common as in the male. An accident which may be regarded as analogous to orchitis, is ovaritis. I have often observed it; and it has not escaped the attention of M. Ricord; very recently, M. Mercier has proved, by an autopsy, that the inflammation may invade not only the Fallopian tubes and ovaries, but even extend to the peritoneum, producing an inflammation of this membrane, an obliteration of the Fallopian tubes, and thus become a cause of sterility.

The following are the symptoms of blennorrhagic ovaritis. After vulvitis and vaginitis, and the manifestation of symptoms showing an affection of the uterus, pains are felt in one or both iliac regions, and there is pain, tension, and swelling, with pain on pressure. A symptom which M. Ricord has observed to be constant, and to which he attaches the greatest importance, is the following: whenever the patient lies on the side affected, the pain diminishes, for with the change in position, the dragging on the organ affected is lessened, and consequently the pain to which it gives rise.

[Mr. Acton observes (*op. cit.* p. 209), that if the finger be car-

ried up the *cul-de-sac* of the vagina, and the patient desired to turn upon the opposite side, pain of a most acute kind will be felt.—G. C. B.]

The inflammation is occasionally propagated to the uterus and ovaries, not during the intensity of the vaginitis, but after a certain period, as we observe orchitis in the male to occur after the second or third week of the blennorrhagia. Generally, the most perfect analogy exists between blennorrhagia ovaritis and orchitis. A cure is almost always obtained. Suppuration rarely occurs. I think, however, that I have observed it in a single instance. The case was one of ovaritis, following an intense vaginitis which extended to the uterus. There was severe pain in both iliac regions, which pains, however, were not sensibly increased by pressure. On examining these regions, after having evacuated the large intestines by two enemas, an indurated space was felt; there were cramps in the lower extremities. Vomiting and pain in the stomach manifested themselves. The pulse was moderately accelerated, and very soft. Cephalagia. Ten days after the appearance of the first symptoms of ovaritis, when the pains had ceased, when all was tranquil, I introduced the speculum. Scarcely had it entered, when there issued from the neck of the uterus a large quantity of well-formed pus, having a most repulsive odor. It was my opinion that this pus came from the ovaries, having reached the uterus through the Fallopian tubes, or by some solution of continuity in the substance of that organ.

I insert in this place, the particulars of an important case which has been recorded by M. Mercier. It sheds some light upon the pathological anatomy of blennorrhagia, as it exists in the female in its most severe and extensive form. We find every part to which I have alluded as the seat of blennorrhagia, affected. There were indeed traces of vulvitis, urethritis, vaginitis, metritis, &c., &c.

"A girl, æt. 19, some weeks since, was attacked, whilst laboring under blennorrhagia, with the premonitory symptoms of typhoid fever. During this period, she was seized with an intense pain in the pelvis: the application of forty leeches produced an abatement of the pain, but the typhoid fever steadily progressed, and at the end of a month the patient died. The following appearances presented at the autopsy:

"In the intestinal canal, there were about sixty ulcers of various dimensions. The internal surface of the labia majora were red and turgid; on the left, at various points were found excoriations. The nymphæ were covered with compact granulations of the size of a pin's head. The bladder, which was very small, contained a little purulent urine. Its lining membrane was red, especially in the vicinity of the ureters and the urethral orifice. The urethra at its inferior part, for about three lines in extent, presented a uniform, deep red tint. Above this point, there were very numerous red spots. The vagina, for an inch and a half above the vulva, was of an intensely red color. Its transverse folds were here also unusually prominent, especially anteriorly,

where were found small compact projections, resembling little vegetations. Higher up, the redness was less marked.

"The neck of the uterus was somewhat redder than the surrounding portion of the vagina. Its opening, which presented the appearance of a very broad transverse cleft, indicated that this woman had been a mother. The color of the cavity of the neck was almost violet. The substance of the uterus was not inflamed, but the color of the membrane lining its cavity, was like that of very red wine. The inflammation extended to the Fallopian tubes, which were not obliterated on the side of the uterus. The cavities of these different parts contained a large quantity of mucopus; but no ulcerations were found.

"Throughout the whole abdominal cavity, except in the lesser pelvis, the peritoneum was perfectly sound. There were no perforations in the intestines. The surface of the peritoneum presented nothing unusual; but in the vesico-uterine *cul-de-sac* between the posterior face of the bladder and the anterior surface of the uterus, existed reddish false membranes, soft, granular, thin, and easily detached. In the utero-rectal *cul-de-sac,* the peritoneum was likewise inflamed, of a livid color at various points, and covered with filimentous adhesions, which extended from the uterus to the rectum; the same adhesions existed on the broad ligaments, the ovaries, and Fallopian tubes, to such an extent as to destroy all traces of the corpus fimbriatum of the latter on the left side, which was obliterated. Notwithstanding the numerous adhesions which surrounded the right pavilion, its cavity still communicated with the peritoneum."*

If typhoid fever had not destroyed this female, and she had lived with the pavilion of the left Fallopian tube obliterated, the corpus fimbriatum on the right side being in such a condition as to prevent the inclination of the pavilion of this side towards the ovary, sterility must have been the consequence. Besides, this is not the first time that obliterations of the pavilion and the Fallopian tubes have been found in females affected with the venereal disease. This fact was noticed even by Morgagni. M. Mercier has suggested that this may be the principal cause of sterility in prostitutes.

Diagnosis.—In the description given of the three varieties of this disease, I think that I have sufficiently established the diagnosis so far as regards its seat. I have not alluded to the acidity of the discharge as a test of vaginitis, nor to its alkaline character in other forms of blennorrhagia, nor to the existence of animalculæ, because it is known that these are far from being constant, and from possessing the importance which has been assigned to them. M. Baumés coincides in this opinion. The diagnosis, as regards the knowledge of the causes and nature of the discharge, is very obscure, more so in the female than the male, and this obscurity often proceeds particularly from the existence of leucorrhœa, which strongly resembles blennorrhagia in its symptoms

* *Gazette des Hôpitaux,* t. viii., 2d series, p. 432.

and effects; for, like this disease, it may become contagious. Doubtless, by taking into consideration all the circumstances connected with the disease, the lapse of time after a suspected intercourse, the previous liability of the female to become affected with discharges, the candid confessions of those who can have no motive to deceive, we may arrive at probabilities, though not to absolute certainty respecting its nature. The seat of blennorrhagia affords no light upon its nature, for that which is urethral is no more syphilitic and contagious, than that which affects the vagina. We can learn nothing from the character or color of the stains upon the linen; the pain, which may be present in blennorrhagia and absent in leucorrhœa, is a still more fallacious symptom on which to rely, for there are discharges, which, at a certain period, have a remarkably indolent character, and which are nevertheless very contagious and evidently syphilitic. With M. Ricord, the seat of blennorrhagia is sufficient to establish its etiology. Thus, according to his researches, urethritis in the female should always be the result of contagion. If carefully interrogated, she will admit that she has been exposed to a suspicious connection. In cases of vulvar and vaginal blennorrhagia, frequently they will not admit that they have been thus exposed. Then M. Ricord, so incredulous generally, credits and admits the statement of the female, as I have already remarked, that the urethral blennorrhagia with which she is affected is the result of contagion, whilst the others may be regarded rather as of spontaneous origin. But statistics, taken on a large scale, show, that among prostitutes, who, of course, are most exposed to infection, urethral blennorrhagia is very rare.

[It was the opinion of John Hunter, that the urethra in the female is seldom the seat of blennorrhagia, but M. Ricord (*Notes to Hunter*, 2d ed., p. 261), states that the female urethra is more frequently affected than Hunter supposed. Mr. Egan, who enjoyed such excellent opportunities for observing blennorrhagia in the female, at the Lock Hospital, Dublin, thus expresses his opinion: "The urethral variety," he observes, (*op. cit.* p. 121,) "is seldom encountered as a distinct form; neverthless, it is occasionally met with." Having recently had the pleasure of visiting the above hospital, which contains 130 female patients, we can cheerfully join with Mr. Egan in the assertion, that there are but few institutions where greater facilities are afforded for investigating venereal affections in that class of patients.—G. C. B.]

This point, doubtless, is still involved in obscurity; but a fact which is well established is, that discharges may occur in the female, not the result of suspicious intercourse, which, notwithstanding, are very contagious. To assert that men who have contracted a blennorrhagia from such a source, cannot communicate it to another female, is, in my opinion, to proclaim an hypothesis not unattended with danger.

Prognosis.—The prognosis, viewed in reference to the seat of blennorrhagia, has already been noticed in describing the three varieties. It is certain that superficial vulvitis, that is, entirely

external, admits of prompt and easy cure. This is not the case when it becomes phlegmonous, and when the glands become involved; I have already stated, that abscesses may supervene, and fistulas, the treatment of which is long and difficult, especially when the latter complication exists. Vaginitis, even when superficial, is generally more difficult to cure than vulvitis; especially is it the case, when the cellular tissue is more or less involved, when the whole vagina, and particularly its superior *cul-de-sac* are affected. As regards rapidity of cure urethritis occupies a middle position between vulvitis and vaginitis. Urethritis may easily be modified by resinous substances, which are known under the name of anti-blennorrhagics, but which exert no influence over the other varieties. Blennorrhagia is especially obstinate when it affects the neck and body of the uterus; it then assumes a catarrhal form, becomes complicated with engorgements which readily pass into a chronic state.

Treatment.—When I was considering the subject of blennorrhagia in general, I pointed out the hygienic and therapeutic principles by which we should be guided. In treating of blennorrhagia in the male, I enjoined certain precepts which have their application here. It remains to constitute the special treatment of blennorrhagia in the female, and to render the matter more intelligible I will adopt the same divisions as in describing the disease in detail.

1. *Vulvar Blennorrhagia.*—That which is superficial, in addition to general and local bathing, requires the use of pledgets to isolate the inflamed surfaces. The weak solutions of nitrate of silver, and of acetate of lead, which were recommended in the treatment of balanitis, may here be beneficially employed. These means generally suffice to cure the local disease in the course of eight days, or to manifestly improve it. It must be distinctly understood that we here speak of the superficial inflammation of the mucous membrane alone. But if it be of a phlegmonous character and the glands are involved, then more active treatment is required; we must then occasionally resort to the abstraction of blood; bathing and the topical use of emollient opiated applications should never be omitted. As with the deep-seated vulvitis chancres may exist at the commencement of the vagina, without the carunculæ, chancres which, by their extent and position, may sometimes escape our attention, we should avoid the use of leeches, as the wounds which they inflict about the anus, and the genito-crural fold may easily be inoculated. When the female is young, robust, and somewhat plethoric, it is better to open a vein in the arm, which practice will not always arrest the progress of the inflammation, nor prevent the formation of pus, but will generally diminish the pain and tend greatly to limit the inflammatory focus.

To return to the topical applications; starch cataplasms, those made from rice farina are preferable to those of flaxseed, which when applied to the excited parts often give rise to eczema, during the short time they may remain.

The parts should be examined for the purpose of detecting sup-

puration. Indeed, by early opening the abscesses, the focus of inflammation is considerably lessened, and the cavity of the abscess is placed in circumstances the most favorable for its obliteration; the formation of burrowing sinuses and fistulas is thus likewise obviated. As a free incision is here of decided advantage when an abscess forms in the substance of the labia majora, I prefer to make the opening on the cutaneous rather than on the mucous surface. An opposite course would facilitate the passage of the vaginal secretions into the cavity of the abscess, which may prevent its closing, and thus expose the patient to the risk of purulent absorption. I have observed numerous facts which tend to corroborate this apprehension, and which cause me to insist on the importance of the precept here inculcated.

Sometimes we are called upon too late; the abscess is already very extensive, and the mucous membrane detached and attenuated; the opening by the skin can no longer prevent the spontaneous opening into the vagina. We must then not be contented with a free incision; we must excise the detached mucous membrane, expose the bottom of the abscess, in fine, reduce all to one level, and destroy the *cul-de-sac* which may have formed. To effect this object it is necessary to excise not only the diseased mucous surface but a portion of the sound tissues.

2. *Vaginal-uterine Blennorrhagia.*—In the treatment of this affection injections are much employed. Recently the tampon has been added to these means. But if the vaginitis is acute and complicated, with decided inflammatory reaction, we should first resort to antiphlogistics, direct and indirect. We may commence by taking blood from the arm; the bowels should be kept free. Demulcent drinks should be administered; warm baths have been recommended, and injections, which are to be used while the patient is bathing; the injections may consist of a decoction of poppy heads, to which a little starch may be added. These decoctions should be employed warm. The active character of the inflammation may require the use of intra-vaginal cataplasms. For this purpose we may inject powdered starch or ground linseed of a half-solid consistence. These cataplasms cannot be employed except where the vulvar ring is very large. A syringe may be used from which the canula has been removed.

When the inflammation has lost its intensity, and the reaction has subsided, we may resort to the use of astringent injections. I recommend the practitioner to commence with the following formula:

℞. Aq. ℥ xx.
Acet. Plumb. gr. xv.
Sulph. Zinc. gr. xv.

An injection morning and evening.

We may afterwards employ the following:

℞. Aq. Ros. ℥ x.
Nit. Argent. gr. iiss.

The strength of both these formulas may be gradually increased. I sometimes advise the alternation of these injections with the concentrated decoction of the leaves of the walnut tree, either alone or combined with an equal portion of tar water. The injections are rendered more astringent in proportion to the chronic nature of the discharge. M. Ricord recommends the following formula:

℞. Alum, ʒi. to ʒii.
Aq. Comm. (cold), ℔i.

Injections of acetate of lead should be preferred, when, to the other symptoms of vaginitis, are superadded that of pruritus of the genital organs. If this does not exist, M. Ricord employs alum. Injections of red wine, in which the red rose leaves have been boiled, are still recommended in chronic blennorrhagic vaginal discharges; or the following formula may be employed:

℞. Tannin pur. ʒiiss.
Aq. ℔i.

When we wish to use the tampon after the injection, the fluid having come away, with the speculum we examine the deepest parts of the canal. Then, we introduce with the forceps rolls of soft charpie, or of carded cotton, until we form a perfect cylinder; we then have a elytroid (sheath-like) tampon. Those who have followed for any length of time, the service of the *Lourcine*, can appreciate all the benefits to be derived from this practice. This method is attended with its inconveniences, as it requires to be renewed daily, which is an annoyance both to the female and the practitioner. Hourmann preferred carded cotton, M. Ricord employs dry charpie. According to the latter, cotton is a mechanical irritant, which even from its fineness, somewhat irritates the parts with which it comes in contact. Besides, it does not absorb the vaginal secretion equally well with the charpie. Charpie of lint is to be preferred. To each roll or pledget of charpie a thread should be attached one end of which should portrude externally, so as to facilitate its extraction. Should the vagnitis resist these means, we must then resort to the solid nitrate of silver. The neck of the uterus having been exposed by the speculum, with the caustic we whiten the whole vaginal mucous surface, as we withdraw the instrument, thus cauterizing it completely from behind forwards.

A. Intra-vaginal Injections.—When there exists blennorrhagia of the cervix uteri, I employ chiefly intra-vaginal injections or *douches*. The fluid used consists of a very concentrated decoction of walnut leaves at the temperature of the room, no matter what the season of the year. I use a large enema syringe; the bivalve speculum is introduced, by which the cervix is seized and well exposed, the stream from the syringe is thrown upon this part with all the force which can be applied to the piston. Immediately afterwards, a strong tampon of charpie is placed on the neck of the uterus. A liquid of this kind thus injected produces as it were a

kind of compression on the neck of the uterus, and diminishes in temperature; it acts beneficially also, by its astringent qualities; sometimes singular phenomena are developed. The cervix is observed to grow pale and to decrease in size; and it seems to contract. These phenomena do not always occur, particularly that pertaining to its color: sometimes, however, I have seen the color increased during the injection. It has also happened, that when the uterus is relieved of the mucosities in its neck, at the moment that the injection strikes the latter part, new collections of mucus have been brought away, showing the retraction of which I have spoken, and perhaps even a kind of contraction of the womb.

The female seldom experiences pain at the moment of the injection. After she has returned to her bed, she sometimes suffers from colicky pains, especially about the hypogastric and iliac regions. I have observed, that these pains are frequently felt about the time that the cure commences, and instead of being to me a source of anxiety, I regard them as a good omen.

The following is worthy of note: when these injections were first employed, the number of cases in which colicky pains were felt was much more considerable than at the present day, notwithstanding they consisted of the same liquid, and that the same proceeding, the same method of administration was adopted. This cannot be explained by the fact that females have now become accustomed to these injections, for persons daily submit to them for the first time. Perhaps it would be more correct to say that the disposition of the uterine cavity (*l'esprit de la salle*) had become accustomed to their use. I shall again advert to this circumstance.

These *douches* have frequently expedited in an extraordinary manner, the cure of certain engorgements of long standing, and have speedily produced the cicatrization of the most obstinate ulcerations. I saw at the *Lourcine* a woman æt. forty; there was a granular ulceration of the cervix uteri of some eight or ten lines in extent in each direction, two or three injections reduced their diameter one-half. These injections have besides an advantage which no one can dispute; they free the vagina and neck of the uterus from their mucosities and secretions which are more or less acrid, and which may exert a greater influence in perpetuating or even producing certain ulcerations than is generally supposed. The application of a tampon of charpie around the neck of the uterus, isolates the latter and thus promotes its cicatrization. The stream of the liquid injected, moreover, determines a momentary compression, which compression favors the resolution of all engorgements.

These injections are employed twice a week; they must not be used during the menstrual period, nor during for two days before or after this period. Pregnancy precludes their employment; they should not be resorted to under four months from the time of labor or miscarriage. When the cervix is very red and turgid, leeches applied to the arms, hip-baths, and general bathing, complete the treatment. During the days that the above injections are not used, the woman may continue her occupation, using herself

the astringent injections whilst lying in the horizontal position with the pelvis raised as much as possible.

B. Intra-uterine Injections.—The object of these is to introduce the medicated liquid not only into the neck but also into the cavity of the uterus. They are therefore employed when the blennorrhagic affection has extended to the womb, and when it has assumed a chronic form, and has become a kind of uterine catarrh. These injections at first encountered strong opposition in the lecture room and in the journals; then the question of priority was raised, showing at once their real success. I was compelled to disavow my claims to the invention of this method; I claimed the merit only of retaining it on the therapeutics, and I even designated several contemporary inventors of it, all for the sake of peace, but in vain! More recently, I devised a much more simple plan to settle the question of priority; I think that I have discovered that it is of Greek origin. I have availed myself of the historical knowledge and politeness of M. Daremberg, who has proved, by the most authentic quotations, that the women of ancient Greece were injected. But whenever reference has been made to the employment of injections by the Greeks, it has been asserted that they were limited to the vulva and the vagina. To this I called M. Daremberg's attention; he has referred to me a very learned note on this historical point; showing conclusively that Greek surgery, which, as is well known, was very bold, attacked even the uterine cavity, and that, in fact, intra-uterine injections were actually employed.

The first objection to their use is the risk of peritonitis to which they expose the patient. Those who urge this must of course suppose that they pass from the cavity of the uterus to that of the peritoneum; the intra-uterine become therefore intra-abdominal injections; the peritoneum becomes inflamed. I cannot notice all the various assertions that have been made on this topic, nor all the petty declamations to which it has given rise. I shall dwell only upon that which is of importance, and will commence by appealing to experimental facts. I have instituted three series of experiments on the cadaver, to ascertain whether fluids injected into the cavity of the uterus, can reach the Fallopian tubes, and through them the peritoneum, and how it can thus happen:

1st. Forced injections; 2d, copious injections; 3d, moderate injections. 1st. To administer the forced injections, such a syringe was employed as is used in our amphitheatres to inject the arteries; the canula having been introduced within the neck, the latter was bound by a ligature around the tube so as to render impossible the return of the fluid injected. The piston was pushed with all the strength of a young and vigorous man.

These forced and prolonged injections were made on uteri detached from the body, and which were not in the puerperal state, but belonging to women who had borne children. The result was that the liquid penetrated first the uterine vessels, and when these were emptied *very slowly*, it passes into the Fallopian tubes, and reaches their peritoneal extremity. The first series of experiments proved the extreme difficulty of penetrating into the tubes, even

when great force was employed; it proved the possibility of thus injecting the uterine veins. Such are the difficulties in causing the liquid to penetrate the Fallopian tubes, that if the cervix uteri be attached to the canula of the syringe by the ordinary proceeding, the injected fluid returns between the canula and the cervix. To avoid this reflux, it is necessary to pass, with a curved needle, a thread through the mouth of the uterus, so as to embrace a thinner layer of the cervix, which is then brought more closely in contact with the canula of the syringe.

I need not here dwell upon all the results obtained by this first series of experiments, pertaining as they do not only to the question of therapeutics of which I treat, but also to that of the functions of the uterus, the history of its diseases, and of general therapeutics.

2d. In the second series of experiments, with the copious injections, a canula was introduced into the cervix having the diameter of a female sound; the cervix was not fastened to the canula, and the injections were continued for a long time. Now the liquid was returned, passing between the instrument and the neck; sometimes it reached, but slowly, the Fallopian tubes; occasionally it penetrated the uterine vessels.

This series furnished the greatest variety of results, as might have been anticipated from the structure of the uterus, its modifications by age, and the functions which it performs. Thus, if we inject the uterus of a female who has never borne children, we find the cervix uteri very small in diameter; it is filled by the canula, and the fluid injected is returned into the vagina with more difficulty than when the same operation is performed on that of one who has been the mother of several children, and in whom the diameter of the uterine neck is greatly increased. The diameters of the orifices of the Fallopian tubes must also present marked differences arising from their greater or less permeability in different women.

The size of the canula must therefore vary according to the state of the cervix; a large quantity of liquids should not be injected, and the injection should not be prolonged. The two following points should be particularly noted; the liquid does not penetrate (if it does penetrate) the Fallopian tubes, except when a large quantity is used, and when the pressure on the piston has been long continued. *In every instance it requires a long time to reach the Fallopian tubes.*

3d. In the *moderate injections* which constituted the third series of experiments, a syringe was selected such as is used for injecting the urethra; only five drachms were thrown into the womb. When pressed with no greater force than that ordinarily employed in injecting the external auditory canal, the fluid did not reach the Fallopian tubes, but always returned into the vagina, passing between the canula and cervix. We need not be very strong vitalists to understand that the passage of a liquid into canals like the Fallopian tubes is still more impossible in the living than in the dead body.

Now, from a little reflection upon these experiments, and the unhappy results which have been attributed to them, we come to the conclusion, that if these unpleasant effects ever did follow, copious and forced injections must have been employed, and that had the contrary practice been pursued, the results would have been different. Those who preceded me used for their intra-uterine injections a clyster or a hydrocele syringe. Now, I maintain, that even with such instruments, strictly speaking no accidents occurred. I have been told that M. Recamier washed the interior of the uterus with water without the least hesitation; and my confrère, Dr. Cardeilhac, assures me that he has passed and re-passed pints of sulphurous water into the uterus of one of his patients. He thus cured a purulent uterine catarrh, which had resisted many medications directed by respectable practitioners.

We are taught by experiment that it is extremely difficult to penetrate the Fallopian tubes by injecting the uterus of a cadaver. In taking precaution to guard against such an accident in the living body, it would be most unfortunate to produce the contrary result, as it would be truly extraordinary if these tubes are more permeable in the living than in the dead female.

The following is the method of proceeding: the bivalve speculum is first to be introduced, and the cervix rectified if any deviation exist. A silver or glass canula is then introduced within the neck, its diameter being fully one-third less than that of the ordinary female sound. It is well to have still smaller canulas for females who have not borne children, and for maidens with narrow necks of the uterus. The importance of this precaution has been understood since I first made known my proceeding, a precaution which I have observed since my first experiments on the living subject. I desire thus to facilitate the return of the liquid injected.

A small syringe, containing five drachms of liquid, is fitted to the canula, and the fluid is injected *suddenly* by a single effort. I formerly used a decoction of walnut leaves, and a solution containing iodide of potassium, and of iodine. I now employ, most generally, one and half grains of nitrate of silver in about three ounces of water. The strength may be increased; only one drachm is to be injected at a single sitting.

The quantity of liquid is so small, it is injected so suddenly, and with an instrument the extremity of which plays in the neck of the uterus, that we can perceive the impossibility of the smallest portion of it reaching the Fallopian tubes. What is to be apprehended is, that it may not reach the uterine cavity. There are cases in which such a failure does take place. It occurs when a *douche*, a preparatory injection, has not been employed to remove the mucosities which collect, in the majority of cases, in the cervix, and which impede the introduction of the medicated fluids destined for the body of the uterus. But when this obstruction has been removed, and the cervix rectified, the injection is easy and complete. An injection may be used every morning; seldom have I been compelled to resort to more than eight during the whole treatment.

In no instance should the injection be employed unless a satisfactory diagnosis has been made; it must be borne in mind that we are treating a uterine catarrh which is protracted by a local cause. And as the uterus is an organ subject to great changes, as its condition at the approach of the menstrual period, as well as for a short time afterwards, differs from that in which it is found in a state of complete repose, and especially as its condition is modified after an accouchement or miscarriage, the use of the injections should be deferred as long as possible after the periods mentioned. Prudence also demands that we carefully examine the state of the other abdominal viscera. Without these precautions, certain phenomena, and even accidents, may occur, which may be attributed to the injections, but which, in reality, are due only to their untimely administration.

Especially should we avoid injections after an *accouchement*, when the mouths of the uterine veins are still widely open. A case has been recorded in the journals, in which water, impregnated with chlorine, has been injected into a uterus under the circumstances just indicated; of course accidents were not long in manifesting themselves.

At the *Lourcine*, it was proposed to inject the uterus of a woman whose previous history was unknown. She had recently miscarried. The accidents which followed the injection were at first referred to the side of the belly; they resembled the premonitory symptoms of a peritonitis, but assumed a singularly nervous character. The lower extremities continued cold; it was impossible to warm them; in fine, a kind of intermittent fever set in, which I combated with the sulphate of quinine. This female remained in a painful rather than diseased state for nearly a month, but left the *Lourcine* cured of her uterine catarrh. I advise an examination of the condition of the other abdominal viscera. If there be any irritation of the stomach, or intestines, if digestion be difficult, if there be diarrhœa, and especially if the large intestine are affected, we certainly should abstain from intra-uterine injections, or we should not resort to them until these complications have been removed. The following case shows the necessity of examining into the condition of the intestinal canal before we employ them.

A woman, æt. 20, had long suffered from *fluor albus;* an examination with the speculum revealed a redness of the cervix; a considerable quantity of dirty mucus issued from the womb. An injection of nitrate of silver was administered; immediately afterwards, the patient was seized with colicky pains and chills; she had six stools during the day, and there was febrile excitement. This woman, on being more closely questioned as to her previous history, stated that she was subject to attacks of colic; that her digestion had been impaired: all of which she had concealed from the fear that she might be placed on an allowance. This patient, like the others, was cured after four injections—the three last having produced no colic. It is evident that the colicky pains, the diarrhœa, and trifling accidents which were observed in this

woman after the injection, existed previously, though in a less decided form. All were exasperated by this trifling operation, and simple rest was sufficient for their disappearance.

We here insert the particulars of a case which affords us another example of a cure, and which, at the same time, gives us an idea of the modifications of sensibility which are sometimes observed after these injections. We shall see that this state does not properly constitute an *accident*, but a phenomenon which can scarcely be called morbid. A female, æt. twenty, who had never borne children, but who was troubled with *fluor albus* of very long standing, had an ulceration of the cervix uteri of a fungous aspect, about the size of a franc piece. *Douches* to the cervix with cauterization, healed the ulceration. A muco-purulent discharge continued from the os tincæ. After a detergent injection, one of nitrate of silver was thrown into the uterus, and ten days afterwards the leucorrhœa had disappeared. In this case, the woman suffered pain immediately after the injection; she compared them to those which precede the appearance of the menses; they lasted during the whole day and the night following the operation. Twenty-four hours after the injection these pains ceased without the use of any medicine.*

The abdominal pains which follow the injection are far from being constant. Most generally, the women who are injected at the hospitals seem indifferent to what is being done; it happens that, at the moment of the injection, the patients complain of a burning sensation which extends from the pelvis to the umbilical region; it may also happen that this pain, or modified sensibility, is manifested in the iliac region. It is seldom that the pain which is felt at the moment of operating, even when the liquid penetrates the uterus, is of long duration.

Some females, instead of suffering during the injection of the liquid, experience pains at the expiration of one or several hours; sometimes, however, it is sooner felt. These pains seldom continue twenty-four hours after the injection; they generally subside in about three hours from their commencement. But, I repeat it, these colics are an exception to the general rule; they occur scarcely in one out of ten who submit to this proceeding; they subside spontaneously after a rest alone, and are not abridged by treatment. However, as females generally wish to have something done, to satisfy the mind, we may prescribe some soothing potion. A still better course is, by encouraging words, to inspire confidence and to persuade the patient that she is sure to recover.

Should the abdominal pain continue long after the injection, on questioning the patient closely, we shall find that this pain is an old affair, an ancient lesion. A woman whom I injected at the *Lourcine* complained for a long time of a pain in one of the iliac regions. I discovered, by questioning and repeated examinations

* M. Callant, at that time my *interne*, has reported other cases of the kind. The subjects were females who were brought to the *Midi*, to make room at the *St. Lazare* for the insurgents wounded in June, 1848.

with the fingers, that in this patient there was a disease of the ovary which had been of long standing.

I have said sufficient on the subject of these pains which have so greatly alarmed practitioners; they are not produced by the irritation or inflammation of the peritoneum which had suffered from contact with an irritating fluid; they are the result of uterine spasm, and to excite them, it is not always necessary to act directly on the internal surface of the uterus, or to penetrate its cavity. The touch, cauterizations, *douches* to the cervix, simple vaginal injections of the most emollient nature, and those administered by the female herself, when they scarcely pass beyond the vulvar ring, may all give rise to violent attacks of colic. One word further in reference to one of my critics on this subject (an honest man, and acquainted with the diseases of the uterus). This esteemed *confrére* observed formidable accidents follow a vaginal injection made by the patient herself. Think you that this observer wrote on the risks that may be apprehended from vaginal injections? By no means; he composed a very fine article to prove from this case, that intra-uterine injections cannot be used without danger.

3. *Urethral Blennorrhagia.*—The treatment of this disease in the female should be similar to that pursued in the male. Copaiba and cupebs should here be administered according to the formulæ already mentioned. Thus, the electuary which I prescribe, copaiba one part, cubebs two parts, produces in the female effects analogous to those obtained in the male. Only the dose should be more moderate, as it is easier to provoke disturbance of the digestive organs; in them colic and diarrhœa are more frequently observed.

As regards injections, I generally recommend those of an astringent character; such as the sulphate of zinc and the acetate of lead dissolved in rose-water, or a solution of the nitrate of silver, but of a strength to cauterize the parts. If this effect be desired, it would be still better to employ the solid caustic, and the ordinary crayon of the pocket-case will suffice.

In describing the accidents of blennorrhagia I have alluded to ovaritis and local peritonitis. When we suspect these complications, we should resort to the local abstraction of blood, by the application of leeches to the affected parts; recommend prolonged bathing, and rub in mercurial ointment over the regions to which the leeches have been applied.

CHAPTER IV.

BLENNORRHAGIA OF BOTH SEXES.

THE anus and the mouth have been observed to be the seat of blennorrhagia, both in the male and female. It is said that similar discharges have been seen in the nose, the ears, and the infun-

dibulum of the umbilicus; this would be umbilical blennorrhagia. As I have no knowledge of these last-named varieties, I shall confine my observations to those which are seated in the anus and the mouth.

SECTION I.

ANAL BLENNORRHAGIA.

Notwithstanding the frequency of unnatural intercourse, anal blennorrhagia is rare in comparison with the forms which we have already considered. The discharges observed in this part are for the most part consecutive, or proceed from mucous tubercles, and chancres. In the adult female, as well as the little girl, the muco-pus which sometimes escapes from the vulva, when the person is in the horizontal position, bathes the margin of the anus, and produces in this part a kind of blennorrhagia. When the disease results from a suspicious connection, there is more or less deformity of the anus, its folds are effaced, and it assumes a more or less funnel-shaped form. The lining membrane is preternaturally red, and it is rare that excoriations such as are observed in balanitis are not found. The surrounding skin is more or less heated, and exudes a moisture. The heat and pain are not confined to the anus, but extend to the rectum, at which part the patient feels an uncomfortable sensation of weight. The discharge may be confined to the anus, the buttocks, or it may proceed from the rectum; it is then more copious, and issues, from time to time, in streams, when the patient goes to stool, which is frequent, or during our examination; occasionally it occurs during the emission of the urine. By the touch, we detect an unnatural heat and turgescence. M. Reynaud speaks of a *speculum ani* which enables us to discover a redness of the mucous membrane which is continuous and uniform, or confined to particular points. In the treatment of this disease, the first thing to be observed is rest and cleanliness. A tampon of charpie should always be interposed between the buttocks, and we should begin with the use of emollient lotions, small enemas of marsh-mallow, and gentle laxatives. When the acute stage has passed, we may resort to lotions and injections of the acetate of lead. These may be followed by the decoction of rhatany. If these astringent injections do not suffice, we *whiten* the margin of the anus with a strong solution of the nitrate of silver, and we even inject a solution of the strength of from a grain to a grain and a half to eight ounces of water. A small glass syringe should be used like that employed for urethral injections. The administration of copaiba and cubebs by the mouth is now abandoned, for not only do they not produce any beneficial effect, but excite in the lower part of the rectum a mischievous irritation.

SECTION II.

BUCCAL BLENORRHAGIA

The following is the substance of my knowledge on this subject. It is copied from the work of M. Baumés.

"A short time since," says the physician of Lyons, "a laborer came to consult me: the left half of his lower lip was tumefied, red, hot, and painful, and there were several whitish granulations on its lining membrane, from which exuded a kind of purulent discharge. This membrane had precisely the aspect which the lining membrane of the neck of the uterus presents from blennorrhagia. This person, who had been under treatment for more than a month and a half, informed me that this affection appeared some six or eight days after he had kissed the vulva of a female who, as he afterwards learned, was suffering from blennorrhagia. Notwithstanding all the soothing measures which up to this time have been employed, I have not been able to procure more than a trifling abatement of this specific inflammation, evidently determined by blennorrhagic matter.*

CHAPTER V.

CHANCRE.

The syphilitic virus, when brought into contact, under certain conditions, with the living tissues, produces two principal effects: 1st, a form of inflammation, which is called blennorrhagia, from its product; 2d, a form of ulceration, which is *chancre*. I have already traced the history of blennorrhagia; chancre will form the subject of our present investigations. It is one of importance, and worthy of the reader's serious attention, particularly as certain syphilographers regard *chancre* as the only medium by which syphilis can be admitted into the system, as the first condition and the *sine quâ non* of the pox. Hence the doctrine, that *without a chancre, there can be no pox.* Facts and the most legitimate analogy show the error of this proposition.

Seat.—Chancre in the male generally occurs at the point of reflection, the *cul-de-sac* of the prepuce, on its edge, whilst in the female, it is found external to the caruncula myrtiformes, near the fourchette. The cases are exceptional, where it is observed on the lips, the anus, the nipple, and at different points on the skin, especially that adjacent to the genital organs, where it is delicate, and has undergone a kind of mucous transformation. Mr. Mac-

* Baumés, t. i., p. 210.

Carthy, whilst one of the *internes* at the *Hôpital du Midi*, collected the statistics of chancres found in extraordinary situations. Of these one was observed in the nose, one on the gums, one on the tongue, three on the lips, two on the chin, four on the hand, two on the scrotum, fifteen on the anus, seventeen on the urethra, and three on the thigh.*

Chancres are generally exposed to view, and are observed without difficulty: in this case, they are called *patent*, to distinguish them from those more deeply seated in cavities and canals, which are termed *concealed* (*larvé*). We may here remark, that this chancre *larvé* has been much abused. Its existence occasionally problematical, mysterious, and always difficult of detection, has singularly obscured the theories entertained on syphilis. Moreover, there are concealed chancres which may be found, and there are those which are never discovered; the latter are those which are especially abused.

[M. Ricord, though he himself disavows any such claim, is erroneously regarded by some as the discoverer of the chancre *larvé*. It was distinctly noticed by Benjamin Bell (*On Venereal*, vol. 1st, p. 22), and by Mr. Judd (*On Venereal*, p. 186); but for the exaggerated importance first attached to this concealed chancre, the entire credit is certainly due to M. Ricord. In his *Letters*, v., pp. 34, 35, he states, that inoculation first and pathological anatomy afterwards, furnished him with incontestable proof of its existence, a fact which, as we have shown, was long before established. We have also attempted to appreciate the value of this "incontestable" proof, and we think we have shown, even by his own experiments, that inoculation cannot be relied upon as the exclusive test for chancre, and as to his pathological evidence, the rebutting testimony of such men as MM. Velpeau, Vidal, and Dr. Gross, render it far from being incontestable. The specimens delineated in his *Iconographié*, and repeated in his *Notes to Hunter*, we believe are all that pathological anatomy has yet afforded him; at least after a diligent search throughout his various works, we have been able to find no other. Chancres at the meatus, or an inch within the urethra, are not uncommon; every practitioner must have seen numerous cases of the kind, but the deep-seated chancre, we think, has more frequently been presumed than proved to exist. Thus, Mr. Acton has reported (*op. cit.* pp. 300, 301, Am. ed.) a case of "indurated, urethral chancre, with secondary symptoms." No mention is made of the existence of bubo, "the necessary, inevitable result" (*Ricord, Lett.* viii., p. 65), and "the almost absolutely certain result," according to Mr. Acton himself (*op. cit.* p. 285), of indurated urethral chancre. The secondary symptoms, too, consisted of rheumatism, an inflamed throat, and an herpetic or eczematous eruption, all of which circumstances render it probable that the diagnosis made by Mr. Fichlin, of Cambridge, who treated the case prior to Mr. Acton, for blennorrhagia, was correct. Mr. Henry J. Johnson (*op. cit.*) remarks: "I have not myself wit-

* *Thèse inaugurale*, p. 13, *et suiv.*

nessed more than three unequivocal cases; one at the Lock Hospital, one at St. George's, and one in private practice." These cases were presumed to be instances of urethral chancre from the fact that there was "a circular yet flattish induration," about an inch or an inch and a half from the orifice, and that they were followed by secondary symptoms, which were cured by mercury. On almost the next page he has reported two cases of blennorrhagia, followed by constitutional symptoms, and in these he does not even intimate his suspicion of the existence of a concealed chancre. Mr. Langston Parker (*op. cit.* pp. 101, 105), has detailed some cases of *supposed* urethral chancre, but in a letter dated May 31st, 1853, with which he has politely favored us, he observes: "In the class of cases to which I have alluded, the existence of the chancre has been presumed, not demonstrated;" and in the same letter he adds: "There do occur, from time to time, cases of secondary syphilis, in no way to be distinguished from those which succeed to an ordinary chancre, which own as their origin and source discharges from the urethra only, which discharges apparently in no way differ from common gonorrhœa, and an examination of the urethra either during or after the disappearance of such discharges, no vestiges of contraction, cicatrix or stricture, or any condition incompatible with a healthy organization, can be detected. Surely, if a concealed, a urethral chancre had been present, its healing must have left some mark behind." Mr. Johnson, as we have seen, based his diagnosis upon the fact, that the disease was cured by mercury, and that there was induration in the canal. Mercury, we believe, is not at the present day regarded as the test of syphilis, and induration, in itself, is a sign of no importance, as it may arise from abscesses, which are not uncommon consequences of blennorrhagia. Although the connection between urethral abscesses and induration is distinctly noticed by M. Ricord, in his *Lectures* (*Gazette des Hôpitaux*, 1847, p. 473), we find him in his *Treatise* inferring from the latter symptom alone the existence of urethral chancre, as in Case XX., p. 113, Am. ed., and others too numerous to mention. The actual state of the question has been admirably expressed by M. Bertherand, of Strasburgh, in his *Prize Essay on Syphilis.* "True," he remarks, "urethral chancres do exist, but it is no less true, that the number of those which have been recognized on the living, or detected after death, bears no proportion to the number of cases of blennorrhagia which are followed by constitutional accidents." Such is the opinion of some of the most eminent surgeons of Great Britain, as we were personally assured on our recent visit to that country, and such, we doubt not, is the sentiment of the majority of our own most experienced practitioners.

In adverting to the seat of chancres, we may also remark, that while non-specific ulcerations are exceeding common on the cervix uteri, chancres are rarely met with in this situation. This fact is particularly noticed by Dr. Henry Bennett in his excellent work on *Inflammation of the Uterus*, 3d ed., pp. 437, 451. It is also confirmed by Mr. Egan (*op. cit.* p. 125). He observes, that

during his attendance at the Lock Hospital for four years, he did not see a single example of the Hunterian chancre on the cervix uteri. What renders the testimony of Mr. Egan on this point the more valuable, is the fact, that this hospital is exclusively for females.—G. C. B.]

It will be perceived that the differences of seat and of tissue give rise to differences of form, of aspect, and of other peculiarities which I shall be particular to indicate.

The tegumentary surfaces to which the virus is applied may exist in two principal conditions: there may be a solution of continuity, an ulceration or wound, or they may be intact. In the latter case, where the virus is applied on a surface more or less excited only, or where it is applied at the moment a solution of continuity of surface occurs, as for example, at the time of a rupture during coïtion, the same condition obtains as when a puncture is made for the purpose of inoculation. It is evident that when there is a solution of continuity, or when this occurs even at the moment of inoculation, certain local phenomena must always speedily become developed; these may not appear, or if they do, appear at a later period, in cases where the surface of the integuments remains intact.

Characteristics of Chancre.—To facilitate our investigations three different stages or periods of chancre may be admitted; that of the pustule, of ulceration, and of cicatrization; in other words, the pustule of chancre, or properly speaking, chancre, is a suppurating wound.

First Stage.—Pustule.—A distinction should always be made, and especially here, between experimental inoculation and physiological inoculation, in other words, from true contagion. Experimental inoculation will almost certainly produce the pustule; it may be studied *de visu.* Physiological inoculation, on the contrary, will rarely afford us an opportunity of observing the pustule if it be observed at all. Let us consider the first effects of experimental inoculation. From the first day, after the insertion of a small quantity of pus taken from a chancre, a red point is noticed where the puncture is made. On the second day there is a slight elevation, then a pimple. Soon a demi-turbid humor, then that which is completely turbid, fills the little cavity. From the third to the fourth day we find a vesicle, a pustule, or a bulla. At first there is a diffused redness around the puncture; this redness becomes circumscribed in proportion to the development of the pustule; an areola forms, furnishing us with evidence of the extent of skin about to be detached. If the pustule be not destroyed, on the sixth day its summit becomes flattened and is covered with a scab. Beneath the first scab another is seen still larger, and other layers exist, which together represent a truncated cone, surmounted by the first concretion. The surrounding tissues then become œdematous and indurated. If the pustule now be opened, three days afterwards may be seen the signs of specific ulceration of chancre, as will be presently described. Such are the effects of experimental inoculation when the lancet has penetrated a *little deeply.*

They commence at the moment of the puncture and occur without interruption. Let it be observed that there are here two things; a puncture or a wound, and the insertion of a virus; in other words a poisoning. This double action I will here merely mention; its explanation will be attempted hereafter. So much for the experimental pustule, which is open to our view, as it may be made to form under our eyes. But observe, what is called the *pustule of chancre* does not always present the same characters; it exists with or without a depression in its centre; its contents are more or less turbid; in fine, it presents the characters, more or less, of ecthyma, but these characters are not always identical; sometimes it is even a pemphigoid bulla, the diameters of which exceed those of the ulceration. If there exist no pathognomic form of eruption, neither is there a *characteristic* pustule. The eruption, moreover, does not always follow the progress which I have described.

If the pustule arising from experimental inoculation, performed in a *certain* manner, is most generally of easy detection, such is not the case with that from physiological inoculation, from contagion. I have often directed the attention of students to this fact, during my gratuitous consultations at the *Hôpital du Midi:* they may pass years in my wards without once meeting a case in which the pustule is observed to precede a chancre. Further, we have carefully watched individuals affected with very inoculable chancres on the edge of the prepuce, by the side of which new chancres would form from day to day. They were attentively examined every morning, and the initial chancre was never seen; in every instance the *debut* was an ulceration. It does not follow, however, that ulceration is always, absolutely always, the phenomenon first observed, for an abscess may precede a chancre. Thus, the syphilitic virus may be absorbed by a mucous membrane, and be carried to a greater or less distance from the surface of application and absorption; an abscess may be there produced, and its opening by ulceration will be nothing more nor less than chancre. Such is the condition of things in case of primary (*d'emblée*) syphilitic buboes. I am aware that practitioners have cauterized vesicles and pustules on their first appearance around the glans. But as these pimples were not pathognomonic, and as, according to these practitioners, we may confound the vesicles of acne and of herpes with the incipient pustule of chancre, I conclude that we cannot be sure that we destroy the latter by cauterization when it is practised under the circumstances mentioned.

I remark, in conclusion, that experimental inoculation may distinctly produce the vesicle or pimple which precedes chancre; that the form of this vesicle or pimple has nothing characteristic, and that experience has always shown me the chancre already entirely developed. Thus, I do not assert that chancre is always primary (*d'emblée*); I do not absolutely deny the existence of the pustule of chancre; I assert that I have never observed it, and that those who suppose that they have, admit that it is difficult to distinguish it from certain other eruptions which are observed on the genital organs, hence I conclude that they have been mistaken.

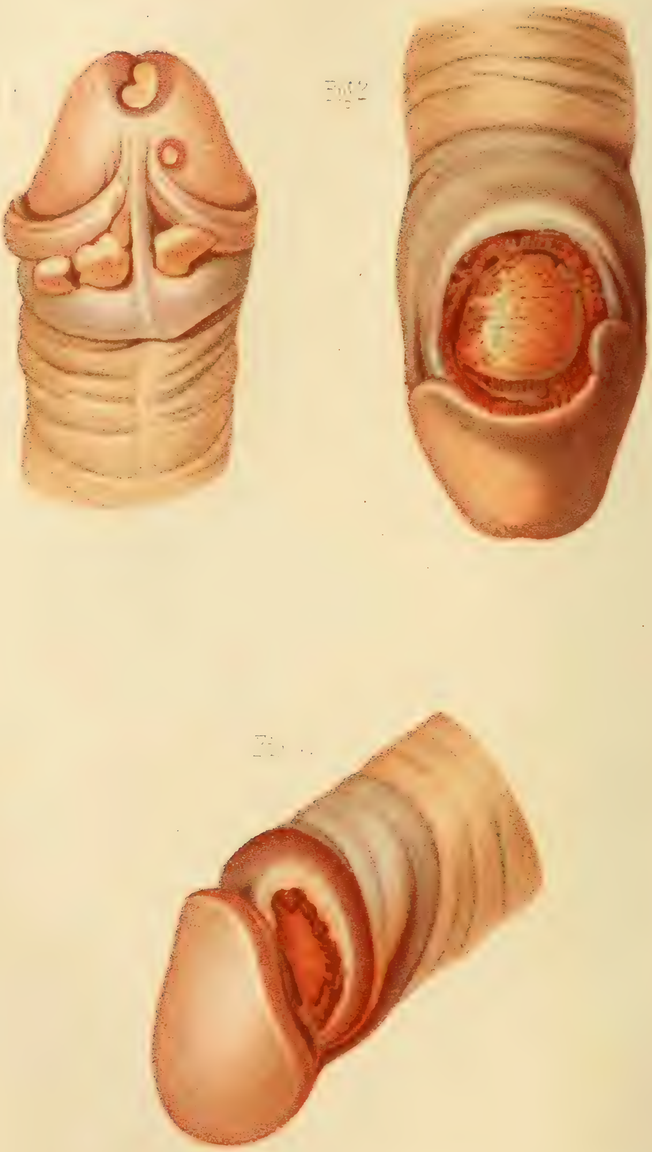


Fig. 1. Inflammated ch[illegible] [illegible] the prepuce

Fig 2 [illegible] chancre in process of cure

Fig 3 A type specimen of indurated chancre in process of cure

Second Stage.—Chancre.—This is the chancre, properly so called. The ulcer is of a roundish form. (Fig. 1, Plate II. represents a follicular chancre on the glans, the circular form of which is almost geometrical; the regularity of the chancre on the summit of the glans is interrupted by the meatus urinarius). Its base is irregular, appearing as if covered with little cells, and is of a yellowish gray color, more or less strongly marked. Its edges are perfectly perpendicular (see Fig. 1), and more or less indented and detached. A violet red circle surrounds the ulcer, the breadth of which is in proportion to the detachment. Generally this ulceration involves the whole thickness of the integuments, and the tissues immediately subjacent are more or less indurated and tumefied. Thus the base is more or less indurated, as are the edges of the ulcer; the tumefaction of the latter causes them to be inverted, and the ulcer is then of an infundi-buliform shape. The ulcerated tissues are not entirely exposed; but are covered by a pseudo-membranous layer, the formation and reproduction of which takes place with the greatest rapidity. This false membrane has been regarded as the matrix, the secreting organ of the virulent pus. Chancres are of various dimensions, from the puncture scarcely visible with the naked eye, to an ulceration of the diameter or even greater than that of a franc piece.

They are not generally numerous; they are two or three; and when they exist in greater numbers, they are follicular, and are very near to each other, either on the glans, the prepuce or the vulva. The following are the most common characters of the regular chancre, that which is most frequently observed. But the ulceration is not always sufficiently deep to remove the whole thickness of the integuments, and its edges are not well defined. Occasionally the centre and borders of the chancre are found to be elevated so as to form a fungous projection; it is then the raised (*élevé*) chancre, (*ulcus elevatum.*) The circular form is not always reproduced, and depends sometimes on the nature of the tissues involved; thus, in the folds of the anus, we meet with the elongated form, and the circle is more or less deformed when different kinds of tissue are invaded: on the edges of the glans and the prepuce chancre encroaches rapidly in the direction of the prepuce, where it finds least resistance, it is then no longer circular. When two adjacent chancres come in contact, they become one, which, however, is not of a circular form.

At its commencement, chancre is sometimes the seat of a pruritus, which occasionally becomes very severe. It is the only modification of sensation of which the patient complains. Sometimes there is a real pain, which may become so intense, as to prevent the patient from sleeping, and require a modification in our treatment: this phenomenon is observed when chancres are concealed beneath a prepuce with a narrow orifice, and in phagedenic chancres. But the pain is most frequently slight, and in some cases is felt only after some irritation, as from coition, which may lead to the detection of a chancre of the existence of which the patient was before ignorant.

The surface of a chancre is bathed with pus more or less sanious, sometimes bloody, and mingled with organic detritus. This pus is alkaline, and contains animalculæ which, however, is not a pecularity of chancrous pus. What gives it its specific character, is the syphilitic virus, which is regarded as the product of the false membrane covering the tissues denuded by the ulceration. If the chancre is seated on a mucous membrane, if it be not exposed to the contact of the air, this pus remains in a fluid state; but if seated on the skin, and exposed to the air, it concretes and the ulcer is covered with crusts.

Chancre is generally of slow progress; it lasts sometimes from a month to several years, and during this long period may retain its power of reproduction. M. Ricord cites in his lectures an instance where the duration of the chancre was seven years. He maintains that chancre is never spontaneously cured in less than a week.

Third Stage.—Cicatrization.—When a chancre is about to heal, it passes into the condition of a wound, that is to say, its virulent membrane gives place to an inodular, cicatrizing membrane. Long since I established in my work on surgery* that the difference between an ulcer and a wound consists in the difference of the membrane secreting the humor which covers the two solutions of continuity. When this cicatrizing membrane appears, the edges of the ulcer which are detached, sink, and approach the base, to which they unite. The inequalities of the base, the indentations of the borders disappear, and are replaced by fleshy granulations, resembling those in suppurating wounds. The violet red circle is succeeded by an areola of a pearly gray color. As the healing of the ulcer progresses, its circular form becomes changed, and angular at several points of its circumference, because its edges are drawn inwards and in an unequal manner, by the inodular membrane, which has replaced the lardaceous layer already mentioned in treating of the progress of chancre. The cicatrix which succeeds to chancre, like that of every solution of continuity with loss of substance, is shrivelled and depressed; sometimes, instead of being depressed, it is, on the contrary, elevated, like a honey-comb. On the mucous membrane these marks at length completely disappear.

Once the healing process commences, its progress is rapid, for it is now no longer that of a chancre but a wound. Cicatrization is not complete while there remains a single point of the grayish base. This point may extend, become developed, and the chancre itself be renewed, or, to speak more correctly, become enlarged and invade the cicatrized portion, and the adjacent integuments, which were not before attacked. But when the cicatrization has once covered the whole solution of continuity, a return is no longer possible; before another chancre can appear, there must be a new inoculation. This is perfectly true, and accords with the opinions of M. Ricord. It is well to note particularly this point in the history of chancre, that it may not be forgotten when we come to decide upon the results of the inoculation of secondary accidents.

* Vid. t. i., 3d ed., article *Ulceration*

Incubation.—Non-localization.—Two important questions here arise, of deep interest in a doctrinal and practical point of view. The first concerns the subject of *incubation;* in other words, it asks, if the syphilitic virus, when applied to our tissues, remains inert or in a dormant state, during a certain period, to be afterwards aroused and to produce effects which are externally apparent. I believe in incubation, that is to say, I believe that the virus may remain for some time a cause without effect, at least any appreciable effect. Hunter admits the incubation: he adds, even, that the interval is longer between the application of the virus and its external manifestations in chancre than in blennorrhagia. M. Ricord here is opposed to Hunter; he maintains that virulent pus, when applied to our tissues, produces an instantaneous action, which remains local, three, four, five and even six days; at which period, if with caustic we destroy the ulcer, general infection is prevented. M. Ricord invokes the aid of experiments and confounds its results, that is, inoculation by the lancet with physiological inoculation, or real contagion. From the puncture made by the impregnated lancet, and the pustule which follows, even to the formation and cicatrization of the chancre, he sees one uninterrupted series of phenomena. But by inoculation, by the wound made in the skin, we create a new surface, a traumatic surface which is not in the same condition as the normal surface on which pus is only deposited. The lancet produces necessarily traumatic phenomena, which ought to manifest themseves immediately, after which the manifestations of the virus appear, so that there is generally no interruption in the development of the local effects; but these effects are not identical, they are of different natures; one is a physical lesion, the other a specific affection; occasionally we observe even a stationary period by which the two effects are separated. Further still, in consequence of certain very superficial inoculations, several days may elapse before any phenomena are produced. So much for the knowledge derived from experiment, when we know how to vary our proceedings.

The advocates of incubation appeal to analogy and to carefully-observed facts. Thus, the greater number of morbid poisons remain in the system for a certain length of time, without any evident external manifestation; they are there in a state of incubation. Why may not the syphilitic virus obey the same law? But facts favor this opinion still more than analogy. M. Baumés declared that a certain prostitute was affected with chancre; notwithstanding the advice of this physician, this woman had connection with an individual who washed himself immediately. This person was subsequently attended by the same practitioner, who carefully watched the progress of his case; it was not until the fifth day that a chancre, preceded by a kind of a little solid scale, appeared on the penis. I am acquainted with a precisely similar case. A young man had intercourse with a prostitute; this woman was famous for her beauty. The young man informed a friend of his adventure. The latter who had already obtained a chancre from the same woman, acquainted the young man with

the fact. The latter, very much frightened, applied to me. For four days, during which I attended him, I observed nothing. On the fifth day, a chancre appeared. Among the cases observed by M. de Castelneau, in which incubation preceded the development of the chancre, the majority of these patients were careful of their persons, and one of these was a *confreré* who was engaged in the study of venereal diseases.

Now for the other question: Is chancre entirely a local affection, or more properly speaking, are the effects of the virus at first confined to the locality to which the latter is applied? How long does it remain in this locality? On this subject we know nothing, and experiment does not remove the uncertainty connected with these questions; four, five and six days are mentioned, because after the destruction of a chancre at these periods, by cauterization and its conversion into a simple wound, cicatrization takes place, and the ulcer is not reproduced. Now there are chancres, which, even if destroyed at the earliest period mentioned in the above category, are nevertheless reproduced in the same place; of this we may be convinced by perusing the work of M. Ricord; we shall there learn that this experiment has not always succeeded in completely destroying the effects of inoculation. Besides, the complete disappearance of a chancre is but a part of the proof of the limitation of the effects of the virus; to be absolutely certain that its action had not extended further, that it has not infected the system, we must watch the patient for a long time, and see that the accidents do not afterward occur which are called constitutional. Now this counterproof, unlike the *clinique*, experiments have not furnished. Indeed, numerous observations prove that chancres which have speedily and entirely cicatrized, have after a time been followed by secondary accidents, and the work of M. Reynaud of Toulon, contains the report of a case by a physician who saw on the genital organs two pustules which he thought would be followed by chancre. These pustules he immediately cauterized, yet secondary accidents were not prevented, although after the cauterization, the patient abstained from sexual intercourse. This case is corroborated by the experiments made by M. Reynaud, Professor at Alfort; he inoculated the virus of glanders; the puncture was first cauterized at the end of three days, this was repeated two days, and lastly in twelve hours afterwards Now, in no instance was infection prevented. Again, M. Bousquet has cauterized the vaccine pustule on its first appearance, yet the subject was refractory to the influence of variola. M. Bousquet, after a discussion on the time required in vaccination to affect the system, expresses himself as follows: "For my own part, convinced as I am, there is actual *infection* during the period of incubation, I firmly believe that the person vaccinated has obtained the fullest influence of the matter a few hours after the pustules have appeared." (P. 529). The same author again remarks: "With a double object in view I have opened pimples a short time after their appearance. I have then cauterized them deeply with caustic potash, so as to destroy the local action of the

vaccine matter. In the next place, I have re-vaccinated these same children, in whom it might be supposed that the vaccine matter had not entered the system, and no matter what precautions I took, the second operation always failed." (Bousquet, p. 534.) M. Hennequin, a physician who is deservedly so highly esteemed, gives himself but little uneasiness about the number of pustules; one suffices to inspire him with a feeling of perfect security, and he permits any one to collect the vaccine matter. "As soon as, and even before the pimple appears, the prophylactic effect is produced." (Bousquet, p. 540.) Thus, in vaccination, the general, precedes the local action, or more properly speaking, the local is but the result of the general condition. The same is true in the case of the syphylitic virus: when chancre has formed, infection has already taken place.

Admitting the localization of chancre, what are its limits? Is it confined in its action to the ulcerated, indurated tissues, in fine, to the evident anatomical lesions, or does it extend to those which, at least apparently, retain their normal structure? No positive answer has been given to these questions. But, mark it well; those surgeons who at first cauterized the pustule with the nitrate of silver, now resort to a more powerful caustic, one which acts to a greater depth, viz. the Vienna paste. Whence the change? Because the caustic first used failed in more than one instance. Moreover, the operation of circumcision, when chancre exists, has more than once furnished proof of the possible infection of tissues apparently sound, and at a certain distance from the chancre; for example, I have sometimes excised almost an inch below chancres on the edge of the prepuce; I have found the skin, mucous membrane, and cellular tissue entirely sound, and yet the wound became transformed into a vast chancre.

[An instance of the latter kind has recently come under our own observation. If, therefore, parts apparently sound are infected, how can we know the extent to which cauterization should be carried in order to insure the patient from constitutional contamination? M. Ricord states in his Letters (xxiv. p. 181) that by cauterizing twice the extent of the ulcer, he has always succeeded. From the conflicting statements of this surgeon, however, contained in the Letter to which we have just referred, and his Treatise (Ed. p. 221), we are compelled to doubt this constant success. In his Treatise he speaks of his constant success with the nitrate of silver; in the above Letter he asserts that cauterization with the nitrate of silver almost always fails! His own testimony is equally contradictory as to the influence of the extent and duration of the ulceration upon constitutional infection. In his first and twenty-eighth Letters, pp. 8, 208, he states that constitutional infection bears no proportion to the seat, number, extent, nor absolute duration of a chancre; that a small chancre exposes equally with a large one to the risk of general infection, &c. In his twenty-fourth Letter, however (p. 181), he asserts that the sphere of virulent activity *is* in proportion to the extent and duration of the ulceration! In his communication, also, to the Academy of Medi-

cine, July 27th, 1852 (*De la Syphilization*, &c., p. 74,) he distinctly declares that a large chancre produces a more extensive infection than a smaller, as the extension of its borders constitutes so many successive inoculations!—G. C. B.]

My opinion on the subject of the incubation, and the localization of the effects of the syphilitic virus, may be thus expressed: believing in the physiological absorption of the virus; in other words, absorption without previous ulceration at the point to which the virus is applied, I should be inclined to admit the doctrine of incubation, and facts moreover show that this incubation is real. In the localization of chancre I do not believe. I do not think that for a certain period the effects of the virus are limited to the narrow sphere of a chancre. I believe that a recently-developed chancre, which already secretes a virus capable of inoculation, will at the same time produce that which is capable of absorption. In certain conditions of the surface, when it is much excited, or there is an excoriation, a wound, or puncture made for experimental inoculation, local phenomena are speedily developed, which are represented by a pustule or otherwise. But these local do not prevent the general effects; they may occur simultaneously. The physician to whom allusion is made in the work of M. Reynaud, and who witnessed the development of the pustules, was both inoculated and affected at the same time, for the destruction of the local effects, the pustules, did not prevent the occurrence of constitutional accidents. Under certain circumstances, on the contrary, the virus is absorbed without producing at first a local effect, and the latter is produced by a reaction (*contre-coup*), that is, after a period of incubation of a portion of the virus.

Varieties.—Thus far we have only considered the so-called *regular* chancre. I have pointed out the characters by which it may be distinguished. I have also alluded to the differences depending on the seat, and the nature of the tissues affected, differences which may mask the ulceration, and change its form. I now proceed to point out the varieties, the deviations of the primary ulcer, which are sufficiently *marked* to be separately described, and this for the sake only of their study.

It is during the progress of venereal ulcerations that their most remarkable deviations are observed, and chancres may so differ in form as to constitute varieties.

1. *Phagedenic Chancre.*—This is a repetition of terms, for the word *chancre* signifies a gnawing corroding affection; but chancre has its conventional limits, which, once broken, go to establish the varieties now to be studied. The progress of the phagedenic affection is not always uniform, and its characters may vary, by which sub-varieties are constituted. Thus, there are chancres, the ravages of which extend almost equally around the centre, which is their starting point; when cicatrization commences, it is observed equally at all these points. On the other hand, there are phagedenic chancres which describe circles and demi-circles, which festoon a region, which have, in fine, a serpiginous progress; we then see cicatrization going on at one point, and the ulceration at another.

[The phagedenic primary ulcer has been observed by Messrs. Acton and Egan to occur in the following proportions: in examining M. Ricord's wards for this purpose, Sept. 20th, 1847, he found but 5 in 112 cases of primary sores, and Mr. Egan (*op. cit.* p. 49) states, that out of upwards of 300 cases of primary infection, he met with but ten which assumed the phagedenic character from the commencement. We are satisfied, that, like hospital gangrene, this form of ulcer is met with much more frequently at some seasons than at others. Years may pass, and in the same hospital but few cases will occur; then, of a sudden, it shall rage with much severity. This was noticed by Benjamin Bell. In his work on the venereal, 2d vol. p. 22, he remarks that he met with more instances of this phagedenic chancre than he had seen for several years before, and in four of them the affection was traced to the same woman, a fact tending decidedly to corroborate the doctrine of a plurality of poisons. It was formerly much more prevalent in this country than at present. In 1818–19, '20, and again in 1827–28, it prevailed to a considerable extent in Philadelphia (M'Clellan's Surgery, p. 239.)—G. C. B.]

The two first sub-varieties which I shall describe depend more particularly upon gangrene,—the first to ordinary gangrene, the second to what is called hospital gangrene.

a. The first sub-variety is termed *gangrenous* chancre. Ulceration being in my opinion but a form of gangrene, I regard all chancres as gangrenous; but in ordinary chancre, the gangrene is *molecular*, whilst in the so-called gangrenous chancre, there are notable portions of tissue of greater or less extent involved; for example, fragments of the prepuce, a part of the penis, &c.; it is therefore the *gangrene of small portions* (*parcelldire*).

At present I have in my wards six patients affected with gangrenous chancre. This variety is more frequently observed in subjects in whom congenital phimosis exists, or who, although able to uncover the glans, have nevertheless a preternaturally elongated prepuce. As the glans resists the effects of gangrene more than the prepuce, the latter becomes more particularly affected. Generally it is on the dorsum of the penis that we find the prepuce perforated to a greater or less extent. The glans sometimes escapes by this opening; the upper part of the prepuce is forced downwards, and the penis assumes a bifid form. Sometimes only a small portion of the prepuce, connected with the frenum, is left. Finally, the gangrene may effect a complete circumcision, destroying the whole prepuce. The glans is generally invaded to a greater or less extent. I have observed exceptional cases, in which the glans alone was attacked, appearing like a little pimple on the end of the urethra. The prepuce remained intact. It happens also that the penis is sometimes completely carried away; prepuce, glans, cavernous body, urethra, all are swept by the gangrene, which has therefore performed a kind of amputation. At present there is a person in my ward (No. 9) whose penis is detached a little above the scrotum.

Six subjects which have come under my observation, had a

good constitution: they had been guilty of excessive indulgence during hot weather. One had a high fever and delirium before the gangrene was established. During the formation of the eschar the patient generally suffers acute pain, especially if the glans be the part affected; the separation of the eschar is rapid, and the wound which follows is speedily cicatrized. I have not observed consecutive accidents in patients who have had gangrenous chancres with considerable loss of substance of the prepuce, although some of them remained two months under my care. It is said that gangrene is the result of the excessive inflammation of the tissues surrounding the chancre, and that this gangrene, by removing the entire ulceration, prevents general infection. But before the gangrene is developed, the virus may already have entered the circulation, as happens in cases where the gangrene is produced by caustics, when the virus may penetrate the system.

b. The second sub-variety is called the *diptheritic* or *pultaceous* chancre. It is most frequently observed in feeble and aged subjects, in children who are placed in unfavorable hygienic conditions, and in persons debilitated by a bad regimen, or an improperly-managed mercurial treatment.

This form of ulceration bears the most striking analogy to hospital gangrene; the chancre is in fact complicated with this kind of gangrene. The base of the ulcer is yellow, with points more deeply colored, and which bleed; it is tomentose, fretted and jagged; the surrounding tissues and the base are thickened and indurated. The skin is of a vinous red color, and detached, for the destruction of the cellular tissue precedes that of the integuments. The skin afterwards subsides, becomes perforated, and finally suffers the fate of the cellular tissue. The parts in which the purulent or rather sanious matter accumulates, are those in which the destruction is most complete; these become distended with organic detritus. I have seen a pultaceous chancre of the prepuce destroy the entire tegumentary covering of the penis even in the scrotum. If we attempt to wash the base of such an ulcer, it bleeds, and we remove but the portions of false membrane by which it is covered. This kind of coating is immediately reproduced.

The patient experiences hot and stinging sensations with severe pruritus: he is, as it were, conscious of the destruction going on within him. When the nerves become exposed by the gangrene, then the patient suffers all the tortures of neuralgia. There is a low grade of fever, and an emaciation follows which ruins the constitution. The patient's system sometimes resists until entire regions are made bare, as for example, the whole inguinal region, a part of the thigh, and sometimes of both thighs. An aged patient, a septuagenarian, was lately brought in a desperate state to the *Hôpital du Midi*, where he died from consumption, produced by phagedenic chancres, which had destroyed the greater part of the penis, and transformed the two inguinal regions into enormous caverns. The autopsy as noted by my former *interne*, M. Pellagot, revealed the following: I transcribe it fully, because autopsies of

this kind are rare, and because a morbid condition of the thoracic canal was here found, which I believe has not before been noted. The reader will perhaps be astonished that the lungs were found perfectly sound, and this too, with a very evident tubercular condition of the most important portion of the Lymphatic system.

"But a few traces of the penis, the starting point of the chancre, were left. In the left inguinal region was an ulceration extending to the femoral aponeurosis, which had destroyed the superficial fascia and the ganglia without touching the vessels. The right inguinal region was the seat of a vast ulceration or gangrenous cavern, extending from Poupart's ligament, its superior boundary, to the junction of the superior with the middle third of the thigh. The tissues were entirely destroyed and the vessels were exposed. The crural nerve was dissected even to its origin. The arterial tunics were thickened but not yet ulcerated. Very extensive coagula were found in the crural vein, which was the seat of some inflammation. The internal saphena was destroyed as high as its origin. Adherent coagula were here found, which explained the absence of hemorrhage during life. The stomach and intestines presented nothing abnormal, with the exception of a slight redness, and hardened faces in the cavity of the latter. Well-organized layers of fibrin adhered to, and were interwoven with, the columnia of the ventricles of the heart. The cardiac muscular fibres were a little pale and discolored, but not softened. There was a milky layer on the pericardiac surface. A slight hypostatic engorgement of the convex border of both lungs were discovered, but the rest of these organs crepitated perfectly, and presented neither purulent foci nor indurated nuclei. Lymphatic system. Both iliac fossa were the seat of a peculiar ulceration. The cellular tissue of these regions, especially that of the right side, was indurated, and studded with tumefied lymphatic ganglia of which some were filled with pus. These numerous masses of ganglia surrounded the internal iliac arteries and the termination of the aorta; they also embraced the thoracic canal as far as its termination, reaching even to the left subclavian vein. The thoracic canal itself presented at long intervals considerable nodosities resembling in form the beads of a chaplet. On incising these nodosities, there were found within the canal lymphatic deposits resembling ganglia. The greater number of these, hard at their circumference, were soft in the centre, and had suppurated like those of the iliac fossa. The osseous system presented nothing abnormal."

The third sub-variety is the *serpiginous* chancre. Instead of starting from a single point like the preceding variety, and extending more or less circularly, encroaching upon the tissues which offer the least resistance, the serpiginous chancre follows circles, or portions of circles, more or less regular, like certain consecutive ulcerations, as the serpiginous syphilida. When cicatrization resists its progress on the one part, the chancre gains on the other. It may then be compared to a creeping plant. Sometimes cicatrization begins in the centre, and the ulceration is

observed at its circumference; so that, in the middle of the ulcer, there is an inodular disk, which always increases in size, whilst the borders become likewise more excavated and enlarged.

The serpiginous chancre most frequently coincides with the tubercular diathesis and the dartrous vice. Sometimes the tubercular condition is not manifested among the antecedents of the serpiginous chancre, but only at an advanced period of the disease. I have witnessed this peculiarity in a patient under my care in Ward No. 11. Occasionally the herpetic vice is hereditary. In one subject, it was not manifested by any particular symptoms, but became developed during the progress of the chancre, which, together with its form, it modified, &c. The scorbutic vice likewise plays an important part in this singular variety of phagedenic ulceration.

In these three sub-varieties, two are clearly capable of inoculation, viz., the diphtheritic and the serpiginous; such, however, is not the case with the gangrenous chancre. According to M. Ricord, the latter does not produce secondary symptoms, and is rarely followed by buboes; and when these occur, they subside and disappear even before the gangrene. The consecutive accidents of the two other sub-varieties have not the grave character of the chancre by which they are produced. Everything here depends upon the condition of the patient, of his constitution, and the diseases from which he is suffering at the time of his infection.

2. *Indurated Chancre.*—Induration, in other words that deposition of plastic lymph beneath and around the ulcer, which gives to chancre its peculiarity, is an inseparable feature in this disease: according to Babington, it even precedes the ulceration. According to this writer, all chancres are indurated. Thus expressed, this proposition is admissible, and I am disposed to accept and defend it. I believe, in fact, that the specific ulceration called *chancre* is, in all cases, more or less indurated. This opinion has always prevailed: to the idea of chancre, has always been added that of more or less induration; thus Astruc, who gives a summary of the views entertained by every writer on syphilis who had preceded him, defines chancre *a small, round, and callous ulcer.**

With Hunter, induration is the rule. Babington maintains that Hunter's description applies to 49 out of 50 cases. We give Hunter's own words: "A thickening of the part comes on, which at first, and while of the true venereal kind, is very circumscribed, not diffusing itself gradually and imperceptibly into the surrounding parts, but terminating rather abruptly" (p. 403, 2d ed. *Ricord's Hunter*). It is the classic induration, the Hunterian chancre. In a note, Babington adds: "The character of primary venereal infection is, essentially, induration passing afterwards into ulceration" (*loc. cit.* p. 409). I should add that between this induration so concisely described by Hunter, and this base which, according to Benjamin Bell, resembles a split dry pea, there are many de-

* Astruc, t. iii., p. 336.

grees which, when carefully observed, go to establish the relations of the ordinary regular chancre with the indurated chancre. I will not, with Babington, assert that induration precedes ulceration; nor will I admit, with others, that induration is consecutive; I believe that both these conditions may occur simultaneously: whilst nature affects a diæresis, it also produces a synthesis, it condenses the tissues, or creates a fibro-plastic tissue beneath and around the ulceration. One cause of deception, and the admission of non-indurated for the really indurated chancres, is that sometimes the base alone is indurated, and the edges readily subside; or the edges alone are indurated, while the base does not present a marked consistence, or the inflammation which surrounds the chancre is sufficiently intense to conceal the induration. Therefore, chancre is always indurated to a certain extent. This is the opinion which I profess. The proof of it is, that allusion is made to hard, hardened chancres, an expression which is diminutive of indurated chancres. This truth, once understood, singularly simplifies the relations of chancre to the constitutional affections.

The following are the characters of the *indurated* chancre, according to those who would at the present day recognize in it a separate form of chancre. The induration represents a demi-sphere, or the base of a split pea, in the language of Benjamin Bell. This induration, this peculiar basis of the ulcer, depends upon an effusion of plastic lymph, and has almost a fibro-cartilaginous consistence (vide Plate 2, Fig. 3), and a certain elasticity, which once observed, is not soon forgotten. The surrounding tissues retain their normal color and consistence, participating not the least in the chancrous induration which ceases abruptly, the boundary of which is a projecting border, which sometimes curls over under the corona glandis. A perfect specimen of this chancre is represented in the figure already mentioned; cicatrization is taking place; it is not entirely round, but the cartilaginous character of the border is clearly recognized by the white reflection. The subject of this chancre was under the care of M. Puche. A roseola had already appeared at the base of the chest, in other words, the patient's system was completely infected.

The indurated chancre secretes little matter; it is not always of a circular form, occasionally a portion of its border projects and forms a crest. According to M. Ricord, chancre does not become indurated until the fifth day, generally not until after the first week. This form of chancre is observed more frequently in the male than the female. It may be complicated with inflammation, and even with gangrene. When the latter occurs, it is central: the inflammation appears to have invaded the indurated portion; it seems to produce strangulation, and, like all inflammations of this kind, when left to itself, it terminates by gangrene. Thus we observe eschars occurring in indurated chancre, which sooner or later separate. Fig. 2, plate 2, represents an indurated chancre which has become transformed into a large eschar, which transformation was accompanied with severe pain. It will be seen that a portion of the glans has been removed, and the corpus cavernosum

exposed; further, after the separation of the eschar, cicatrization has commenced, and it is at this stage that the sketch was taken. The patient was in Ward No. 11, of my service, at the *Hôpital du Midi.*

With the history of chancre have been connected questions still involved in obscurity. By some, it is maintained that the indurated chancre alone is followed by syphilis, or that it is the starting point of the constitutional disease; others believe that it is principally this form of chancre which produces the pox. As I have shown that chancre is always more or less indurated, it is unnecessary to refute this proposition. Then again it is asserted, that the chancre must be strongly indurated, to be followed by consecutive accidents. To this I reply, that these accidents have been known to follow chancres but moderately indurated, and the speedy cicatrization of those which were regarded as non-indurated. Moreover, those who make of the indurated chancre a separate variety, admit that induration is not generally established until after the first week. Now, during this period, infection may take place, and generally it does not wait this term. In my opinion, instead of framing the question thus: Can the indurated chancre alone produce secondary accidents, or does it produce them more frequently than the other varieties of chancre? I would rather ask, What connection exists between the indurated chancre and the constitutional disease? Certain it is, that the general state of the system modifies the form of the chancre, and wherever we find an action which can be called *syphilitic,* the reaction must be greater. For example, when chancre is obstinate, when, from being moderately, it becomes much indurated, and seems to constitute a separate variety, I believe that the syphilitic virus has then for some time already infected the system. The cause of the constitutional disease therefore exists, and the system is already infected. This degree of induration proves only that the diathesis is established: for the indurated chancre is really a consecutive accident, an expression of confirmed pox. But the effect of the diathesis may be confined to this point; in other words, we may have an indurated chancre, without any other manifestation of the general infection.

[We are satisfied that the majority of practitioners do not coincide with the views of M. Ricord, who would restrict constitutional infection to the true indurated chancre. Our own observation has taught us the correctness of the doctrine inculcated by Mr. Lane, in his valuable lectures published in the London *Lancet* for 1841–2, vol. ii. p. 594. He thus observes: "The practical inference I wish you to draw from these remarks is, that a mere principle, an excoriation, a vesicle, a pustule, a minute ulcer, one covered with a scab or not, a superficial ulcer, a raised ulcer, a deep one, one with or without induration, a spreading ulcer, phagedenic or sloughing, a stationary one, a cicatrizing ulcer, ulcers varying in form, in color, size, or number, may contain, or have contained, the syphilitic virus, and, consequently, may be followed by the secondary or constitutional disease." Those engaged in the study of syphilis cannot do better than to consult

these lectures by Mr. Lane, whose connection with the Lock Hospital, London, and whose vast experience in the treatment of syphilis, render his remarks of great practical value.—G. C. B.]

Is it necessary to reply to the question: Can a patient have several different attacks of indurated chancre? Is it true that a chancre, becoming developed after the indurated, will assume this form? But this is a complicated question, since all chancres are more or less indurated; or, if we would speak of a strongly-indurated chancre, the expression of the syphilitic diathesis, the question becomes involved into this: Can a person have the pox more than once? Experiment has already replied to this in the affirmative; and the case observed by M. Boully, which we have quoted, leaves no doubt on this subject. I shall return to this question in treating of the *consecutive venereal* accidents. The indolent bubo, which should be the inevitable accompaniment of the indurated chancre, will be considered in the next chapter.

3d. *The raised chancre* (*ulcus elevatum*).—The base of this chancre is raised by a kind of vegetation of the form of a round or oval basin, of a fungous nature, and more or less raised above the skin. These chancres occur frequently on the edge of the prepuce; they furnish a sero-purulent matter, are generally not painful, and their borders and base are but little indurated. When cicatrization takes place, it still remains for some time above the level of the skin, a flattened and whitened projection, which is slow in disappearing; the cicatrix, after awhile, sinks to a level with the surrounding parts. Too much importance has been given to this form, not only in making of it a separate variety, but as giving rise to a peculiar kind of constitutional disease. Fig. 1, plate 2, represents three raised chancres on the prepuce, and two ordinary chancres on the glans. The latter are the result of inoculation with the matter from the former; they are therefore all produced by the same virus; only those on the prepuce assume a fungous character, on account of the yielding of the loose cellular tissue of the part, which cannot occur on the glans. The subject of these chancres was in Ward 10, bed No. 13.

Now, if we reflect on the different forms of chancre, which I have described under the head of *varieties*, we find that they are the result of complications. Thus, the first variety is complicated with gangrene; another form, the *diphtheritic*, with hospital gangrene, whilst the indurated serpiginous variety is connected with the tubercular diathesis. I believe that the *raised* chancre depends greatly on the locality; it assumes this form when it is seated on loose cellular tissue, as on the prepuce. I believe that this is the most important practical view of the subject, in our investigations into the causes of the deviations in the form of chancrous ulcers.

Diagnosis.—In the majority of cases the diagnosis of chancre is not difficult. The practitioner who possesses a tact for observation, need but glance at an ulcer to detect its syphilitic nature. I have already described chancre with sufficient minuteness to aid the young practitioner in forming a diagnosis. A round ulcer with edges perpendicular and a little detached from the

gray or yellowish base, covered with little cells, *induration*, a violet-red circle, located on a part concerned in sexual intercourse, suspicious connection: these sum up the characters and circumstances by which a true diagnosis may be established. But these elements do not always fully exist, and they are sometimes modified and defaced: thus, both form and color may be changed, and the ulcer may be seated in an unaccustomed locality. Interest, false modesty, may lead to the concealment, or a misrepresentation of the antecedent circumstances. The uniform test with M. Ricord is the matter secreted by the ulcer: if, on inoculation, this pus produces a chancre, its syphilitic character is established, and the other elements of diagnosis are of no value.

But, as there are chancres, the pus of which cannot always be inoculated, this test cannot always be trusted; and these are the chancres which present the most difficulties, and in the diagnosis of which inoculation would therefore be the most useful! Such, indeed, are the chancres of unnatural shape, caused by cicatrization or some other complication, such the deep-seated chancres, the chancres *larvés*, for the diagnosis of which inoculation should be so important, yet these are precisely the cases in which it fails. (See my remarks on the nature of blennorrhagia.) As to other chancres, those which are open to view, and still progressing, unmodified by the process of cicatrization, inoculation is here useless; it is even dangerous. Thus, in doubtful cases, when it is of importance to decide whether an ulcer is or is not a chancre, inoculation is insufficient. The differential diagnosis of chancre, in other words the distinction between primitive and consecutive ulceration cannot be established by inoculation, since I have demonstrated that both of these forms of ulceration may be inoculated. We must, therefore, in obscure cases, have an especial regard for *clinical* diagnosis; we must carefully collect the antecedent circumstances and inform ourselves of the commencement of the progress of the ulceration, minutely note all the characters of the lesion, and pay especial attention to those furnished by the tissues in which the ulcer is seated. If there be an induration, and if the other circumstances are in favor, we may regard it as a syphilitic ulceration; for, in my opinion, every syphilitic ulceration is accompanied with induration. There are cases in which this is the only character on which we can fix: indeed, certain chancres of the fossa navicularis, or concealed beneath a narrow prepuce, are only discovered by the touch, which detects the indurated points. True there are other kinds of ulceration which are indurated, but then the concomitant circumstances are different, their progress is not the same, and they lack the circumstances that precede venereal diseases. Thus, cancerous ulcers have a more or less indurated base, but their entire history shows no connection with chancre. Sometimes it must be acknowledged, that notwithstanding the most minute attention to details, and the greatest power of grouping them in one assemblage which shall represent their diagnosis, the latter still remains obscure, and our doubts are removed only by the appearance of certain consecutive accidents.

The young practitioner should therefore be very cautious in announcing his opinion, especially in courts of justice. It is important that he be forewarned not only that observation may lead to mistakes, but that he should also understand the errors which may result from experiment. He has been told that inoculation affords a test by which we may decide in medico-legal inquiries now, as it is well established that there are true chancres which are not inoculable, it therefore cannot possess a positive value. What would be thought of a test without a positive value, and of which the negative response is to be totally disregarded!

Certain ulcerations are observed in the buccal cavity, which may be regarded as syphilitic ulcerations, and here I include those which are primary and secondary, as in a practical point of view, the difference is of no great importance. Mercurial may resemble venereal ulcerations. When mercury affects the mouth it produces ulcerations, the base of which is whitish, milky, and not gray or yellow, like the syphilitic ulceration; in fact, they rarely exhibit ruptured vessels. The circumference of mercurial ulcerations, instead of being like the syphilitic, of a violet red color, is pale, like the interior of the mouth. These mercurial ulcerations are found particularly within the cheeks, on the edges of the tongue, and especially behind the molar teeth; they are numerous, and their edges are neither indurated nor perpendicular. Syphilitic ulcerations may occur in the same situation, but they are most frequently observed on the palate, the tongue, tonsils, pharynx, and at the commissures of the lips; their edges are perpendicular; they are indurated and few in number, being sometimes three or more. Besides, in the mercurial ulceration there is a peculiar odor, with more or less salivation, and the patient complains of a metallic taste.

Complications.—In speaking of the varieties of chancre I have asserted that in reality they depend on complications. There are two other complications or accidents, of sufficient importance to be separately described; these are phimosis and paraphimosis. As buboes may occur without a previous chancre, and as accidents completely primary, I shall treat of them under a separate head.

This is an appropriate place for noticing a case which I believe to be unique. It is that of a chancre of the meatus urinarius, which so narrowed this orifice as to produce a retention of urine; a perforation of the bladder afterwards occurred which might have been regarded as a chancre, or a rupture arising from certain alterations which rendered it easily broken. The following are the particulars, as they were carefully noted by my *interne*, M. Codet. In connection with the report is a sketch of the pathological specimen.

C. (I.), a water porter, æt. 26, temperament nervo-sanguineous, constitution robust. Admitted March 18th, 1852, Ward No. 10, bed No. 12, under the care of M. Vidal. Health always good. He ate heartily and drank much wine. Three years since he had a chancre in the burrow of the glans near the frænum. After light treatment it healed in the course of three or four months. No

enlarged ganglia in the groin or in the neck. The cicatrix of the chancre is smooth and soft as the parts by which it is surrounded. No consecutive accidents. Eighteen months ago he contracted a blennorrhagia; during this attack there was no retention of urine. Pain was moderate during micturition, and the latter was followed by slight hemorrhage. Slight pain in perineum. Orchitis on the right side soon followed; this was cured in fifteen days. The blennorrhagia lasted for three months.

In the early part of February 1852, he had another attack of blennorrhagia, which appeared fifteen days after a suspicious intercourse. The discharge was very small, and there was but little pain in urinating. C. does not know whether at this time there were enlarged ganglia. A potion and injections were prescribed, but this treatment was very imperfectly followed, and at the end of five or six days it was abandoned, the patient resuming his usual habits of life, drinking to excess, and perhaps working more than ordinarily. He wore no suspensory bandage; the discharge was slight, as were his sufferings. This state of *things* lasted until the 14th March, 1852.

About the 13th of March, the patient experienced some difficulty in urinating; but on the 14th he was seized with an intense cephalagia, and violent pains in the flank. The urine was voided with difficulty, and its emission was accompanied with a trifling hemorrhage. Constant tenesmus, anorexia, bitter taste in the mouth, severe thirst. On the 15th, the desires to urinate were very urgent. Micturition more and more difficult; slight pains in the epigastric region; spittle tinged with bile. This condition became aggravated, and the patient entered the hospital on the 18th March, 1852.

18th.—Difficulty in walking. He arrived in a carriage, and it was necessary to support him, whilst he mounted into the ward; every movement, he stated, increased his suffering, which was in the sides. For three days he has passed but a few drops of urine. The complexion is a little discolored, and there is an expression of suffering on the countenance. The pain in the head and sides is very intense. Abdomen slightly distended; there is dulness for nearly an inch below the umbilicus, whilst above, there is tympanitic resonance. The pulse is feeble and frequent, the tongue slightly loaded, the mouth bitter, thirst severe. From time to time, the patient discharged some mouthfuls of bile. Respiration is a little accelerated.

The prepuce, red and swollen, permits the meatus to be with difficulty exposed. On the part adjacent to the frenum, a chancre was found, of the existence of which the patient was unconscious, and whose base was a little indurated. The surface of the ulceration is limited, it extending about a line into the canal. A little muco-purulent matter lies between the lips of the meatus; pressure on the urethra does not increase the quantity. An examination, *per rectum*, detected a slight enlargement of the prostate. The ganglia in the groins are slightly enlarged (for what length of time patient does not know). The glans, like the prepuce, is red. The

meatus, very contracted, will not admit an ordinary silver catheter; a small, gum elastic instrument, a little larger than a raven's quill, introduced within a stylet, passes with facility. The pain is somewhat severe. Half a pint of urine was evacuated. Its flow was arrested (the eyes of the catheter having become obstructed). A second catheter of the same kind, introduced in the same manner, encountered some difficulties at the meatus, after which it passed with ease; it gave exit to nearly a pint of muddy, highly-colored urine, which exhaled a decided ammoniacal odor. The urine issued in a jet.

In withdrawing the sound, it was closely embraced by the canal. After the use of the instrument, some drops of blood appeared at the meatus. Some hours afterwards, I attempted again to introduce the catheter; it was arrested on a level with the bulb. A large cataplasm moistened with laudanum was applied to the perineum (he had taken no bath at the hospital). In the evening the patient felt better; he passed his urine without the catheter. Abdomen still swollen, general condition same as in the morning. Laudanized cataplasms to the perineum, and to the abdomen. On the 19th, M. Vidal saw the patient. Condition same as yesterday. Examination by the rectum detected a slight enlargement of the lateral lobes of the prostate, which were separated by a slight furrow. This enlargement was not painful on pressure. No pain in the perineum. M. Vidal enlarged the meatus with a bistoury. A silver catheter then passed to the bladder without difficulty; nearly a pint of urine was evacuated. Cataplasms with laudanum; two pots of whey; twenty leeches to the perineum. In the evening, the catheter was readily passed. Respiration more difficult than in the morning; fatigue increased. The urine deposited a sediment, having the aspect of blackish powder.

20th.—Passed a restless night; thirst troublesome; countenance somewhat changed from yesterday; abdomen more distended. The severity of the other symptoms has not increased. Bath; laudanized cataplasm. In the evening, the lips of the wound assumed the aspect of a chancre. Patient is much worse; eyes hollow; cheek-bones prominent; naso-labial prominence very marked; pulse small, intermittent; pulsations from 110 to 120 in the minute; no chills; abdomen moderately distended, but little painful. Patient is troubled with vomiting of bile.

21st.—Bad night; delirium. Pulse very feeble, and intermittent, 130. Vomiting, almost constant, of pure bile; severe thirst; dyspnœa increasing. Abdomen tympanitic. Constant agitation of the patient in bed.

Catheter passed readily, and brought away a little urine. When it reached the bladder, it seemed to be closely embraced by the neck of this organ, and its movements were limited. Apply one oz. of Neapolitan ointment to the abdomen; laudanized cataplasms. In the evening, the patient was a little better, and could urinate without the catheter.

22d.—The slight improvement of yesterday has not continued.

Violent delirium during the night; anxious respiration; countenance rapidly changing; pulse thready and very frequent; constant vomiting of bile. Lungs perfectly sonorous, except posteriorly, along the pulmonary depression, where the sound is a little obscured, and mucous râles are heard. The abdominal walls, constantly distended, were a little painful on pressure. Pain in the sides very severe. Catheterism; bath; continuation of the mercurial ointment; tilleul, two pots (the whey yesterday produced a slight diarrhœa); laudanized cataplasms. In the evening pulse was almost imperceptible. Countenance of a yellow complexion; features very sharp; lips dry; tongue coated; sides constantly painful on pressure; slight delirium; extremities cold. The catheter evacuated some spoonfuls of urine.

23d.—Patient was delirious the whole night. Constant picking of the bed-clothes. A small quantity of urine was passed by the instrument. Forty leeches to the abdomen; bath; laudanized cataplasms. Noon.—Abdomen less swollen; eyes convulsed; lips of a violet color; extremities cold. No pulsation at the wrist. Died at four o'clock in the afternoon.

Autopsy, forty hours after death. Weather cold and dry. The body exhibited no signs of putrefaction. Cadaveric rigidity very decided. The abdominal walls, having been opened by a horizontal incision below the umbilicus, were found infiltrated with a reddish brown liquid, and were evidently softened. Adhesions, consisting of false gelatinous membranes, existed throughout the convolutions of the intestines. The bladder adhered likewise to the parietes of the abdomen; it had mounted about an inch above the pubes. Its external surface was of a deep violet color. In order to expose the parts most involved, the urethra was divided throughout its entire length by its superior wall; the symphisis pubis was also divided. An incision was made through the prostate from its pubic surface, and the bladder was opened by its anterior wall. It contained but little urine. Its internal surface was generally red, particularly about the trigonem. On the right side of the bladder was found an ulceration about the diameter of a twenty centime piece; this ulceration penetrated through the whole thickness of the organ; beneath it were false membranes themselves perforated, at two or three points, by which the bladder communicated with the abdomen. (As before stated the original sketch has been reduced to one-fifth its size.)

The edges of this ulcer were clearly formed, and round, resembling a cap surrounded by a well-developed vascular band; on this cap were seen small irregular whitish layers, which seemed to be sub-mucous and a little hard, like incipient vegetations; they were scattered over the whole internal surface of the bladder, but in much less number, than around the perforation.

The prostate was but little enlarged; the volume of each lobe being about that of a small nut. Its substance was highly injected. The urethra was perfectly sound. At the meatus, the chancre was found, to which we have alluded. Testicles sound. The soft parts in the lower pelvis were softened and somewhat in-

Chancre at the m

...tion of the bladder

filtrated with urine. In the abdomen were traces of a violent peritonis. Sero-purulent effusion, large quantities of false membrane, covering all the contents of the abdomen; as well as between the liver and the diaphragm. The kidneys presented nothing unusual; by pressure, however, a milky fluid was made to issue from some of the calices; in other respects they were perfectly sound. The stomach and intestines when examined from their internal surfaces were sound. The liver was congested. The spleen, very friable, was reduced almost to a pulp. The heart was sound. The lungs presented no traces of tubercles; they were a little congested only, at their posterior surface; a portion of their surface taken from this region would not float in water. The brain was slightly injected. The inguinal and cervical ganglia were red and moderately swollen.

There was, in this case, a solution of continuity in the bladder, which permitted the urine to be effused into the cavity of the abdomen, an accident which was mortal. The retention of urine could have resulted only from the enlargement of the prostate, which, however, was not considerable. An obstacle existed at the meatus, where was seated an indurated chancre; but this obstacle was trifling, for a gum-elastic catheter, of small size indeed, (a little larger than a raven's quill,) could be introduced into the bladder. Thus, the obstacle was not sufficient to cause of itself a rupture of the bladder. The perforation, moreover, did not present the characters of a lesion entirely physical.

1st. Did the instrument (the catheter) perforate the bladder? Besides that it wanted the characters of an entirely physical lesion, it may be added, that the catheter was at first introduced by a well-informed pupil; it was small, of gum elastic, and as the *stylet was not used*, consequently it must have been very flexible. After the division of the meatus, I myself introduced the silver catheter, and always with the greatest care.. I found no resistance, and its introduction therefore required no effort. In no instance was the catheter allowed to remain. Thus, the rupture or perforation of the bladder, does not appear to me the very probable result of a physical lesion. There remain two other hypotheses.

2d. As there was a chancre at the meatus, a very inoculable one, we may suppose that the first small catheter became charged in its eyes with a certain quantity of virulent pus, and which being thus carried into the bladder produced a chancre, or perforation by ulceration in this organ. To this may be objected the short time which elapsed between this inoculation and the phenomena that announced the approaching death of the patient. But may not the progress of chancre in the bladder be much more rapid than that of other parts? The place to which I have assigned this case, shows that I incline towards the opinion that it was a vesical chancre. This, however, is only an hypothesis, and I think it would be difficult even after having examined the preparation, to decide positively on its nature.

3d. Now, for the third hypothesis. Small firm elevations like vegetations were observed in this case. They are well represented

in the annexed plate; they are seen at several points of the bladder, at the *bas-fond*, and around the perforation. It is evident that, had these growths been somewhat analogous to arterial concretions, the bladder could not have retained its normal consistence; it could not have been dilated here as at other points. Now, it may be supposed that the urine, meeting with an obstacle to its passage, has distended the bladder in the same manner as when it was sound, but which now diseased, yielded at its most fragile part, viz., the seat of these morbid growths. According to this hypothesis the chancre at the meatus must play an important part, though a physical one; it obstructed the passage of the urine. But whence these morbid growths in the bladder? The subject having had several attacks of blennorrhagia, having also had a chancre at the meatus for a longer period than that which he mentioned, these productions may be regarded as venereal warts.

Prognosis.—This should be regarded both in reference to the local symptoms and the constitutional disease. Considered in the latter point of view, all chancres are equally grave, since, in their early stages, all resemble each other: the varieties do not become established until the absorption of the virus has already taken place. The effects of this poison on the system, the formation of a diathesis, do not therefore at all depend upon the character of the chancre, but the state of the system, its susceptibility to its action, and the manner in which it reacts. Here, hygienic conditions, idiosyncrasy, a well-directed treatment, exert a great influence in the establishment of the diathesis and the constitutional disease. I will not repeat what I have said as to the connection existing between the indurated chancre and the syphilitic diathesis, and the pox. *The indurated chancre does not produce the pox: it proves only that general infection has already taken place.* In the second point of view, it is evident that the phagedenic chancres are the most grave; the gangrenous, diphtheritic and serpiginous forms may give rise to very serious effects. For example, we find the gangrenous chancre destroying the penis, whilst the serpiginous may dissect the region of the nates. The effects, then, are not confined to the part or parts invaded by this terrible ulceration, for the constitution becomes exhausted by the pain, the abundance, and duration of the suppuration, which are the common effects of the serpiginous phagedenic chancre.

Treatment.—1st. *Abortive Method.*—To destroy the chancre with caustic, the knife—in fine, to substitute for it a simple wound, capable of speedy cicatrization, and thus preventing general infection, was Hunter's idea, which some have tried to realize in France. But for this purpose, three things are requisite:—1st, that the virus shall not have had time to enter the system; 2d, that in the case of localization, we should know the limits of the affected locality; 3d, as those who maintain that chancre is local, admit that it is so only for a limited time, it is necessary to fix the limits of this time. Now, these facts have not been furnished by those who believe that chancre is a local affection, whilst the contrary

has been proved by well-authenticated cases. Indeed, chancres have been destroyed by the caustic, or knife, but general infection has not been prevented; sometimes, even in these cases, the chancre has returned and the pox has followed. The reader should here consult the paragraph, entitled, *Incubation, not the localization of chancre.* I there spoke of a physician who saw the very first appearance of the chancres on his own person, who cauterized them, and in whom they cicatrized, and yet the pox was not prevented. Facts of this kind are not rare, and analogy corroborates this view of the subject. We know that the first effect of the syphilitic virus has often been compared to the bite of a viper or the sting of a venomous animal. M. Ricord often compares chancre, on its first appearance, to the bite of a viper. I believe that this is a very just comparison, of which we may be satisfied by the perusal of the following case, which may be found in almost every medical journal. The case is most authentic, proving the simultaneous production of the local and general effect, and that cauterization was completely impotent to destroy the effects of the poison. M. Dumeril would certainly have died, if the bite of a viper was always mortal.

"M. C. Dumeril was walking, on the 12th of this month, in the forest of Sénars. Having discovered a viper which, from its size, appeared to belong to a new species in our climate, the learned professor seized it with his hand, expecting, by breaking its dorsal spine, to kill it; but, either because the animal was too strong, or that he was not properly seized, he bit his adversary deeply. Five successive bites on the hand and arm did not induce this votary of science to relax his hold, and the suffocated viper became his prize. M. Dumeril fortunately was accompanied by his son, a physician. The latter instantly sucked the wounds, and cauterized them with caustic potash. Notwithstanding these precautions, and immediate attention, the poison produced its effects. M. Dumeril, after two protracted fainting fits, was seized with vomiting. In this condition he was carried home, where he remained for twenty-four hours under the influence of the poison. At the end of this time the alarming symptoms disappeared, and the learned professor resumed his course at the *Jardin des Plantes.*"*

Thus, in spite of every precaution and attention, the poison entered at once into the system, and produced its constitutional effects. The reader may refer to what I have stated about the experiments of M. Renaud, to prove the rapid action of the virus of glanders, and what M. Bousquet has established respecting the vaccine virus. Now, the same observations apply to the venereal poison.

But, let us examine the so-called *abortive* method, and the other plans of local treatment. I will afterwards mention that which I deem the most efficacious in promoting the cicatrization of chancre, and in preventing general infection. M. Ratier, an advocate of cauterization, and believing in the existence of the pustule as the

* *Gazette Medicale*, Sept. 20th, 1851.

earliest symptom of chancre, calls his method of treatment the *ectrotic* method. According to M. Ratier, the pustule is about the size of a grain of millet-seed; it is filled with serum, more or less transparent; it remains for a short time a perfect pustule; it appears from about the third to the eighth day. M. Ratier advises the excision of its summit, with flat curved scissors, the complete evacuation of the fluid which it contains, and washing it with water in which has been dissolved a sixth part of the chloride of soda. The result of these proceedings, under the circumstances, is certain: it is less so when the pustule is left to break, in which case some of the *débris* remains.

I would remark, that it appears to me very difficult to find a pustule of the size of a grain of millet-seed, the summit of which may be excised with flat-curved scissors. And then the *débris!* (*Vid.* Ratier, *Méthode ectrotique, Archives de Medicine.*)

M. Ricord once was satisfied with cauterization made by a crayon of nitrate of silver. He now resorts to monohydrated nitric acid, and to the Vienna paste, according to the following formula:

℞. Quick Lime, 5 parts.
Caustic Potash, 6 parts.

Mix and dilute with sufficient alcohol to make a paste.

One word in passing, in reference to the necessity of abandoning the nitrate of silver for caustics, of the power of those just mentioned, this implies some failure of success by the former method, and a deep penetration of the virus during the earliest stages of chancre, that is to say, at a time when the abortive method is regarded possible and rational. [The very first case in the Treatise of M. Ricord, shows that cauterization, even before, or at the fifth day, does not always prove effectual. In speaking of the localization of chancre we proved even by M. Ricord himself, that cauterization must often fail, as the limits of the sphere of infection in chancre cannot be ascertained. Mr. Lane is disposed to rely on the abortive treatment for a much longer period than M. Ricord, and observes, that he should be much surprised to find any sore which healed within a fortnight of the application of the original poison, followed by secondary symptoms (*Lect. in Lond. Lancet, July* 30, 1842, *p.* 597). Now in page 594, he inculcates in strong terms, that an ulcer *with* or *without* induration, may be followed by constitutional disease. The secondary accidents he attributes to the continued absorption of the matter reproduced by the primary sore, "the enormous quantity thus generated and retained in contact with the living tissue may be judged of, when I tell you that hundreds or even thousands of persons might be inoculated daily from a single ulcer." (p. 498). On the same page, Mr. Lane admits that the poison of syphilis, when applied to the living tissue in a fluid state, is instantly absorbed into the circulation, but in the ordinary mode of application, the quantity is too small to produce any appreciable effect. Now, one of the most

perfect examples of complete constitutional infection which has ever come under our notice, followed a very small primary sore, which was thoroughly cauterized on its first appearance, and, in addition to this the patient, a very healthy robust man, was immediately salivated. With the greatest deference to so high an authority, we feel confident that numerous facts might be quoted to show that even M. Ricord in assigning the fifth or sixth day as the period on which we may rely on escharotics, in the abortive treatment of syphilis, has gone farther than experience, even his own, can warrant. The action of morbid poisons has been most ably discussed in the Lecture, to which we have referred, and which we strongly recommend to the reader's attention. Mr. Lane's practical belief may be inferred from the following extract of a letter with which this gentleman has kindly favored us, dated June, 1853: "I give mercury so as slightly to affect the mouth, not only in indurated chancre, but in all primary sores, unless some more than ordinary reason forbids. I give it not so much in order to heal the sores (except when indurated) *as a preventive of the constitutional contamination* (the *italics* are our own). I prefer escharotics, however, when patients will submit as the surest means of protecting the constitution. I use pure nitric acid for this purpose. This acid we believe to be the surest escharotic which we possess.—G. C. B.]

An opinion may be formed of excision by the results of circumcision during the existence of chancres on the edge of the prepuce. The results of this operation are very various. I have sometimes cut beneath chancres which appeared to be not completely cicatrized, and the wound by means of sutures healed by the first intention. At other times I have excised nearly four lines beyond a chancre perfectly cicatrized, the wound was made in parts apparently completely sound, and yet two days afterwards this wound has been transformed into a large phagedenic chancre. I have made incisions into indurated prepuces which resembled a shell covering the glans, and yet the wound has speedily cicatrized; at other times, and in analogous circumstances, it has assumed a bad aspect, an obstinate serpiginous character. This method, therefore, has several inconveniences. The principal, is, that the edges of the wound are likely to put on the specific character of the chancre, which renders excision as irrational as cauterization, for they are based on a false idea of the connection between chancre and the organism, since they suppose the localization of the former.

The abortive method, therefore, does not prevent general infection, nor has it the efficacy attributed to it. But is it attended with the risk asserted by those who regard it is a wolf among the sheep? In destroying and healing a chancre, do we thus prevent the elimination from the system of the virus, which is therefore left to produce its deleterious effects on the system? I believe that this opinion has been carried too far. I believe that infection has taken place even whilst the chancre is forming; the local and general action are simultaneous. The danger lies not here. When cauterization succeeds in destroying and cicatrizing the ulcer, the

patient, and sometimes the inexperienced practitioner, repose in false security, and do not resort to general or specific treatment to prevent the development of constitutional disease; hence, under such circumstances, it is more likely to appear and to be severe. Besides the other risks which M. Chomel attributes to cauterization, he insists upon that to which we have just alluded. Depuytren was an avowed enemy of cauterization; he called it *the most fatal of methods.**

It is therefore useless to search for the best methods of destroying chancres, we must learn how to treat them.

2. *Dressing.*—Even here M. Ricord would cauterize. If the chancre be not thus destroyed, we may always diminish its extent, reduce the surface of absorption, and consequently the chancrs of infection. (This, by the way, is a condemnation of the practice of those surgeons who inoculate with the matter from one patient to another; for in multiplying the chancres, that is, the surfaces of absorption, they increase the chances of general infection.) He also advises, that we cauterize with the nitrate of silver or nitric acid as often as the ulceration reappears after the separation of the eschar; when it assumes the characters of a wound, and cicatrization has taken place, we should cease to cauterize. There is here a difficulty, viz. to distinguish a real ulceration from a wound, in other words, from the ulceration in process of cicatrization.

As to dressings, properly so called, M. Ricord generally abstains from the use of ointments, especially the mercurial. He frequently makes use of the aromatic wine, according to the formulary in the codex. M. Baumés adopts the following formula:

℞. Sugar Candy, ʒ i.
Wine, ℥ i.

The following is M. Ricord's practice:

The ulcer is washed with wine, without however irritating it, or causing it to bleed; it is then covered by a bit of fine charpie dipped in the same wine, sufficiently moist to remain so without being colored; if saturated with too large a quantity, the kind of maceration which results is productive of bad effects. At each dressing, to loosen the charpie, it should be soaked with wine, so as not to lacerate the parts to which it may adhere when dry. According to M. Ricord, as the result of this mode of treatment, *successive chancres never* appear, as so frequently occurs after the other methods. The aromatic wine diminishes the purulent secretion, tends to promote cicatrization by modifying the surface of the virulent ulcer, and in acting as an astringent on the adjacent parts, it renders their inoculation impossible. When the discharge continues to be copious, we must have recourse to the vinous decoction of *tan* bark. M. Ricord now prefers the following solution:

* *Leçons Orales*, t. i., p. 108.

℞. Tart. Fer. et Potas. ʒ iiss.
Aq. Oct. iss.

If the ulcer be painful, the aromatic wine often augments the suffering; by adding from one to one and a half ounces of the gummy extract of opium to an ounce of the above solution, it becomes a useful topical application. Among those who continue to suffer, there are some in whom the pains are removed by increasing the quantity of opium, whilst in others they are only diminished.

There are cases in which we are compelled at once to suspend temporarily the medicated wine or the ferruginous solution, and even to renounce it completely. Thus, in certain patients, suppuration ceases, and the ulcer remains stationary; a dressing must then be used for some days of emollient decoctions or of opiated cerates. The wine and the ferruginous solution may afterwards be resumed. In others, the ulcer being indurated, these dressings increase the induration, and prevent cicatrization. Aside from these circumstances, according to M. Ricord, so easy to be discovered and regarded, the means already indicated should constitute the general method of dressing. Once the period of cicatrization arrives, and progresses with regularity, we continue the dressings. M. Ricord does not cauterize, unless it be necessary to repress the exuberant granulations. Finally, it often happens that only the epidermis is wanting to complete the cure; the surface of the ulcer attains the level of the surrounding parts, remains red, is seldom covered with matter, and yet the ulcer does not heal. Then the gentle application of the nitrate of silver, so as to whiten the surface without cauterizing it, to any depth, suffices to finish the cure. According to M. Reynaud, powerful caustics, especially the nitrate of silver, increase the risks of adenitis. This naval surgeon prefers the mercurial solutions. He takes from ten to fifteen grains of the bichloride of mercury to the ounce of distilled water. The chancre is touched with little folds of charpie, saturated with this lotion, and this practice is followed for four or five days. It must be discontinued if the ulcer assume a vermillion color. If the aspect be doubtful, the applications are to be continued. In all cases we must void excessive irritation of the tumor.

M. Ricord, in cases of the regular chancre, confines himself to local treatment, *where it leaves no induration behind.* I have underlined the above passage, as it leaves us to infer that the regular chancre may be indurated. For my own part, I always admit the existence of more or less induration. As it will be seen hereafter, I never confine myself to local treatment. M. Ricord never loses sight of induration during his treatment. Indeed, by extending, it may oppose cicatrization, and by the strangulation resulting from the indurated tissues, it may produce gangrene, and frequently phagedenic disease. In ordinary cases, which are the most simple, the indurated chancre is dressed with:

℞. Calomel (*à la vapeur*) gr. xv.
Pomatum of cucumber or Opiated Cerate ʒ i.

Charpie smeared with this ointment is applied, and it must be renewed three or four times in the day.

[Mr. Langston Parker, referring to the general applicability of the treatment by the mercurial vapor bath, remarks, that there are some forms of disease which yield with greater rapidity than others. "That which gives way with the greatest difficulty is the induration which succeeds to the healing of a primary sore. I do not mean that soft fulness which is sometimes found in such situations, but that cartilaginous hardness which is met with under the skin, and which is sure, sooner or later, to end in local or constitutional mischief. I have seen cases which have resisted all modes of treatment but the baths; to these they yield but slowly, but they do yield, and with certainty, after other plans of treatment have been followed for months without success, or with but par tial amendment" (*On the Treatment of Secondary Syphilis, by a Safe and Successful Method*, &c. p. 16). It has been proposed to destroy this persistent induration, with caustic or the knife; but as is observed by Mr. Egan, "An intractable species of ulcer usually results upon the application of the caustic, and excision but removes the original sore, to be replaced by one of a less manageable description, which, upon healing, will, in all probability, exhibit the same characteristic induration of its predecessor" (*Op. cit.* p. 228).

Mr. Key was decidedly opposed to the use of mercurial applications, their action, in his opinion, being to increase the ulceration and the secretion. "Mercurial washes or ointments, in the ulcerated stage, I employ, not as a general rule, but as the exception in sores indolent, not sensitive, and secreting but sparingly. In the larger number of sores, mercurial applications are hardly admissible in our list of remedies: the common astringent salts—as the preparations of silver, lead, zinc, and copper—varied as the state of the sore will bear, check the disposition to spread quickly, and bring on an appearance of granulations. To the premature use of mercurial dressings much of the troublesome career of their sores may be attributed," &c. (*Report of Primary Syphilitic Cases. Guy's Hosp. Reports*, vol. iv.). Mr. Key advises, that, in the ulcerated stage, if mercury is administered internally, it should be given sparingly and cautiously watched, and with it he would combine the use of local astringents. The method recommended by Mr. Parker is certainly that which seems liable to the fewest objections.—G. C. B.]

In the case of copious suppuration, the chancre is first to be washed with the aromatic wine, which may be employed alone if the discharge be too copious. Should the patient be irritable, and an inflammatory complication exist, and especially when the gangrene above mentioned is spreading, opium should be used both internally and externally. In such cases I administer both morning and evening, camphorated pills of opium, the formula for which I have already given when describing the means for subduing erections which occur in blennorrhagia. The concentrated solution of opium answers best as a dressing. Antiphlogistics, however, must not be omitted. Thus, when the patient is young

and robust, I often resort to venesection. I recommend bathing and the application of laudanized cataplasms, if the locality permit.

3. *Author's Method.*—I attach but secondary importance to the use of local means. I do not generally resort to cauterization until after cicatrization has commenced, and the chancre has passed into the condition of a wound. Then, if this wound granulates, I check the exuberant growths with the nitrate of silver, applied rather strongly; if the traumatic surface present a languid aspect, I stimulate it by gentle applications of the same caustic, which then skines over the solution of continuity. With regard to dressings properly so called, I sometimes use a mixture of aromatic wine and one third of water. I believe that it is often better to substitute for astringent and irritating injections those of an emollient character. I have seen dressings of too irritating a nature, excite inflammatory complications. It will here be recollected, that the followers of Broussais attached great importance to the use of antiphlogistics, and that their treatment was often followed by success. (Of course I speak of the cure of chancre only, and not of the pox.) I rely especially on general treatment, and the following is that in which I have the most confidence:

1st. General bathing; two days of perfect rest.

2d. If the patient be young and robust, bleeding from the arm.

3d. The next day, a saline purgative; Seidlitz water or citrate of magnesia. If the patient be feeble, of the lymphatic temperament, I commence with a cathartic.

4th. Pills of the bi-chloride of mercury, according to the following formula, which is nearly the same as that of Dupuytren:

℞. Hydrarg. Bi-chlor.
Ext. Thebaiq. āā gr. i.
Cons. Ros. q. s.

Ft. pil. 25. *Take one morning and evening.*

This treatment, adopted in the early stages of chancre, and continued for two months, promotes cicatrization, prevents the development of secondary accidents, or if it fail to prevent, they are singularly mitigated. But it is very necessary that it be continued for the time prescribed without interruption. If from carelessness on the part of the patient, or intolerance of his system, the administration of the pills is interrupted for only eight days, no dependence can be placed on what has been given; the treatment must then be commenced anew, and with much less chance of success. But the preliminary measures, such as blood-letting and purgatives, dispose the system favorably to the tolerance of the mercury. In females, who, by their more lymphatic temperament, cannot bear repetitions of the loss of blood, we frequently observe accidents which compel us to suspend the use of the pills.

This method has rarely failed, in other words, it has been prophylactic against general infection in every instance in which it has been resorted to in time, where it has been well managed and

regularly followed. This has been the basis of my practice for fifteen years. It has been asserted that patients thus treated have had consecutive accidents. If these patients had been carefully interrogated, it would have been found that some one of the circumstances above mentioned had interrupted the constant use of the mercurial pills, or, indeed, that the treatment had been undertaken at a time when the chancre had already acquired a degree of induration which indicated the existence of the syphilitic diathesis. Then, the mercurial treatment was insufficient; other means must be employed, which I will mention when I consider the treatment of confirmed syphilis or that of the indurated chancre, which itself is an expression of the syphilitic diathesis.

[If it be true, as stated by M. Ricord in his *Letters* (No. XXX.) that the persistence of the syphilitic diathesis is not incompatible with good health, and that this diathesis may last for ten, fifteen, or thirty years, it is difficult to estimate the prophylactic value of mercury, or any other agent. Even though we administer, as advised by him, a daily dose for six months, we cannot be sure that we have prevented the future development of the presence of this diathesis. We need not, therefore, be surprised at Hunter's contradictory statements upon this subject. When mercury is employed in the treatment of chancre, we find that in a given number of cases no secondary accidents appear; again, if mercury be dispensed with altogether, we find that a large number escape, or at least never show any manifestation of constitutional infection. In the treatment of the true Hunterian chancre, nearly all civil practitioners are agreed as to the necessity of resorting to this remedy. Military surgeons, however, boast of extraordinary success, from simple treatment alone. In the *Clinical Lectures* of Mr. Carmichael, or in the *Lectures* of Dr. Graves (2d Dub. ed., p. 385), the reader may find reports highly favorable to the non-mercurial practice. Mr. Guthrie treated some 100 cases on this plan, and though he arrived at the conclusion, that "every kind of ulcer on the genitals is curable without mercury," yet he believes that in some cases a gentle course will expedite the cure. (*Med. Chir. Trans.* vol. ix.) He does not, however, regard mercury as a specific in this disease. Sir George Ballingal has furnished quite a body of evidence in favor of the simple treatment, for which see the 4th edition of his *Military Surgery*, p. 465. If cauterization is likely to succeed in any cases, it is in those which come under the care of army surgeons, for the soldiers are under orders to apply to the surgeons on the very first appearance of the disease. This is doubtless the cause of the superior efficacy of the simple treatment in military practice. Indeed, we have the testimony of Sir Benjamin Brodie, that Mr. Rose, who was so successful with the non-mercurial treatment in the army, in private practice was compelled, like other surgeons, to resort to this remedy. (*Lecture* in *London Lancet*, Feb. 1844, p. 673.) Sir Benjamin is a decided advocate for the use of mercury, not only as a prophylactic but a curative agent; and in this view of the subject, Messrs. Lawrence, Porter, Cusack, Lane, and Wilson coincide.

Mr. Langston Parker regards the simple, or "rational" treatment, except in the indurated chancre, with decided approbation; and Mr. Egan, in alluding to the use of mercury, evidently considers that its employment should be restricted to this form of ulcer. The following different estimates of the liability to secondary accidents, when mercury is not used, are deserving of notice:

NON-MERCURIAL TREATMENT.

According to	M. Cazenave,	-	18 in	20	cases.
"	M. Repiquet,	-	12 "	20	"
"	M. Cullerier,	-	10 "	20	"
"	M. Baumés,	-	6 "	20	"
"	M. Puche,	-	4 "	20	"
"	M. Ratier,	-	0 "	20	"
"	Sir J. McGregor,	-	96 "	1940	"
"	Dr. Pitcairn,	-	0 "	768	"
"	Mr. Spence,	-	21 "	367	"
"	Mr. Bacot,	-	1 "	10	"

According to Sir G. Ballingall, the army reports show that, without mercury, one in twenty have secondary symptoms; with mercury, one in fifty-five cases. The evidence, on the whole, goes to prove the correctness of the assertion of Sir Benjamin Brodie, that mercury surpasses all other remedies "in extinguishing venereal disease;" yet there can be no question that, even when properly and judiciously used, it, like all other agents, often fails to accomplish this object. A specific for syphilis is yet to be discovered.

In conclusion, we can only add, that the principal British practitioners who are regarded as non-mercurialists, may be said to be Messrs. Ferguson, Rose, Guthrie, Hennen, Hill, Thomson, Alcock, Todd, and Dr. Graves; whilst among our own countrymen, we may name Drs. Chapman, Dewes, Ware, Alexander H. Stevens (in secondary syphilis), Harris, Rousseau, and Phinney.—G. C. B.]

The method of treatment which I here recommend has been sanctioned by the experience of very eminent practitioners. Indeed, Dupuytren, M. Chomel, Broussonnet, and others, have acknowledged the advantages of administering the bi-chloride of mercury in minute doses and for a length of time. M. Chomel strongly insists on the necessity of not interrupting the influence of the mercury. Dupuytren advised, after the chancre had healed, to continue the use of the pills which bear his name, as long, at least, as was required to produce the cicatrization of the chancre. M. Chomel, in his lectures, never fails to remark that it is not the quantity of mercury taken which best insures a cure, but the length of time during which the system has been modified by this agent. He recommends that the treatment should be continued for five or six months. M. Broussonnet gives Van Swieten's liquor in the dose of from one to two spoonfuls in the day till the patient has taken as many as eighty or one hundred doses. If the system is *antipathic* to this preparation he substitutes Dupuytren's pills, of which he gives from one hundred to one hundred and twenty.

3. *Treatment of the Phagedenic Chancre.*—In the treatment of this

variety of chancre we should pay the greatest regard to the temperament of the patient, to the hygienic circumstances by which he is surrounded, and the treatment to which he has submitted, as well as to the complications which exist. The digestive organs, or the lungs, may be diseased; sometimes there exists a dartrous, a scorbutic, or scrofulous diathesis. The latter especially most requires a specific treatment, and for a long time this complication has been regarded as most unfavorable: indeed, even Boerhaave remarked that if mercury does not always cure the pox it is owing to a strumous complication.* Mercury, instead of curing, aggravates a phagedenic ulcer. However, if it is prudent, in the majority of cases, to abstain from mercurials in the treatment of the phagedenic sore, they should not be entirely banished, as in some cases they may have a real efficacy. If our efforts do not succeed we should not persist in their use; it is better to resort to other means than to some new preparation of mercury. Generally the ferruginous and the preparations of iodine in small doses, the cod liver oil are preferable. Still we should not be exclusive in our treatment.

[Mr. Langston Parker says that he has seen phagedæna in the nose, throat, and on the penis, stopped at once by immersion in the baths for half or three-quarters of an hour. "No other remedy can be brought to bear thus speedily upon diseases of this nature, and the mutilations and losses of substance which occur in such states take place whilst we are waiting for the action of remedies." (*On the Treatment of Secondary and Confirmed Syphilis, by a Safe and Successful Method*, p. 28.) Surgeons are by no means unanimous in denouncing mercury in the treatment of phagedænic chancre. By Wallace, Mayo, and Messrs. Lawrence, Porter, Skey, and Ricord, it is admitted that in some of these cases it is a very valuable remedy. Mr. Porter is very decided upon this subject. After alluding to the opposition to this treament by some of the highest authorities in surgery, he observes: "Now, with every deference to these authorities, and with a previous acknowledgment that cases will occasionally fall out forming exceptions to any general rule of practice, these are the very cases (as far as I can distinguish them) in which I am not only disposed to employ mercury, but to administer it in the form and manner most likely to bring the system under its influence." Mr. P. describes another form of phagedæna produced by mercury, the medicine acting as a poison; in such cases he would suspend it at once, and discard it altogether. (*Lect. on Syph.* p. 36. *Dub. Med. Press*, Jan. 20, 1847.)

Mr. Key and Mr. Carmichael were among the opponents of mercurial treatment in phagedæna, and Mr. Acton (*op. cit.* p. 273,) says, "let the young surgeon never be induced to give mercury under any pretence whatever in acute cases of phagedæna." The only exception, he adds, is to be met with in a form of indurated chancre attended with central slough. M. Ricord acknowledges his ina-

* Vid. Boerhaave, quoted by Astruc, lib. ii., p. 286, of the French translation. This is a very remarkable passage.

bility (Ed. of *Hunter*, p. 459,) to point out the cases of phagedæna, in which mercury is likely to prove of service, though he states that there can be no doubt of its occasional efficacy in these cases. If we were to resort to it at all in phagedæna, we certainly should prefer Mr. Parker's mercurial vapor bath to any other form of administration.—G. C. B.]

When we have to treat a gangrenous chancre, the result of excessive inflammation, the first thing requiring our attention is the inflammatory complication. When I come to treat of phimosis and paraphimosis as complications of chancre, I will point out the course to be pursued. The phagedenic gangrenous chancre may, on the other hand, proceed from general debility; this should be another reason for abstaining from the use of mercurial preparations; here cordials, tonics, topical applications saturated with chlorine water will constitute the basis of our treatment. According to M. Ricord, the local treatment of the pultaceous diphtheritic phagedenic chancres should resemble that of ordinary chancre. The combined use of cauterization and the dressings of aromatic wine, and especially the ferruginous solution. The cauterizations with the monohydrated nitric acid should be deep and repeated; in some cases it should be practised twice a day to keep pace with the progress of the disease. The dressings should likewise be here repeated, for the discharge is very copious. There are ulcerations which are cured only after the employment of a kind of almost constant irrigation. During the use of the dressings we should guard against any lacerations, for each solution of continuity may become inoculated, and the removal of the skin favors the absorption of virulent pus, which will still enlarge the boundaries of the ulcer.

In the case of very severe local inflammation the application of leeches has been advised. In addition to the difficulty of making them bite at the points of ulceration the bites may cause an increase of the ulcer according to the depths of the tissues wounded. We must also guard against their application near a chancre, for each puncture made by them may be transformed into an ulcer. If the local inflammation compel the practitioner to resort to blood-letting, the leeches should be applied at a certain distance *above* the ulcerations. The bites should afterwards be covered with compresses soaked in emollient and narcotic decoctions, with cataplasms of starch or semolia and milk; hot mucilaginous or gelatinous baths, and particularly a diet proportioned to the general or local condition, absolute rest, and diluent drinks, are here very beneficial. If there be much irritability or pain, with or without much inflammation, according as the one or the other predominates we must use the preparations of opium both generally and locally.

M. Ricord uses the following solution for a dressing:

℞. Aq. dist. lactucar. ℥ viss.
Ext. op. gum. ʒ i. M.

Even here this practitioner resorts to cauterization with the nitrate

of silver, and regards it as a powerful auxiliary; with him, pain or inflammation is no objection, as he considers that the nitrate of silver is one of the most powerful sedatives, and the most certain *antiphlogistic* when it is properly applied. The severe pain experienced at the moment of cauterization soon subsides, and an improvement is manifested which we seek in vain from other medicines. This rule has but few exceptions.

When the phagedenic chancre continues to progress or to remain stationary, we have seen good effects produced by carrot *cataplasms*, melted yellow wax, as a digestive ointment. In these cases, also, recourse has been had to the most powerful caustics, the butter of antimony, potash, alcohol, the arsenical paste of Rousselot or Frère Come, the actual cautery applied directly, or as an objectif cautery. The Vienna paste, and particularly the monohydrated nitric acid, have likewise succeeded. I prefer the latter caustic, for regarding the pultaceous phagedenic chancre as a chancre complicated with hospital gangrene, I treat it as I would the latter disease. The following is my method: I begin by making little rolls of charpie sufficient to cover the ulcer; each of these is soaked in nitric acid, and applied over the diphtheritic layer, on which we press a little, then another is placed by the side of the first, in such a manner as to fill the ulcer. A layer of charpie is placed over this first dressing, then a compress, so as to make gentle pressure. This dressing is renewed twice in a day, and at each change the parts are bathed with wine, in which walnut leaves and the petals of the red rose have been macerated. In the milder forms I am content to saturate the charpie with a mixture of equal parts of tincture of iodine and water. In those more obstinate, M. Ricord recommends the application of a blister just above the ulcer, or a dressing composed of powdered cantharides. In his notes to the second edition of Hunter, in which may be found repeated his advice as to the treatment of phagedenic chancres, the above method is suppressed. Was it forgotten, or was it not rather owing to the fact that it did not sustain its first reputation? I know not. I can say nothing of this method from experience having never employed it.

The edges of the diphtheritic phagedenic ulcer are frequently so denuded and attenuated, that their adhesion seems impossible. If the ulceration result from an abscess, there may be considerable separation, and the skin become very thin, from the simple sojourn of the pus, without having been involved in the plagedenic action. Then, no matter what the extent of tissues to be sacrificed, a cutting instrument may be employed, the curved scissors being preferable, to excise neatly, and to give to the wound the form most favorable for cicatrization. It is desirable to avoid as far as possible the formation of scars, in certain regions, as they remain as stigmas of habits which the subject wishes not to be exposed. But when the enlargement of the ulcer is the result of phagedenic action, the knife is more injurious than beneficial, for instead of limiting the disease, it favors its extension, unless we resort to the cauterization of the wound inflicted. But would it not therefore be better at once to cauterize? For this purpose M. Ricord pre-

fers the Vienna paste. He maintains that by this caustic we may not only limit its action to the parts which we wish to destroy, but we may also completely destroy the virulent surface, and prevent the too rapid inoculation of the new edges of the ulcer, by the interposition of an eschar, and a kind of vital reaction, the absence of which, in some cases, is one of the principal causes of the ulceration.

Whatever may be the variety of the phagedenic chancre, when it detaches the frænum, and produces a fistulous track, a bridge, by excising the parts thus separated, and ulcerated, and which became diseased from contact, the cure is greatly expedited. A blade of the scissors is passed beneath the sinus, we then cut near the glans, and afterwards reset the portion which remains adherent to the prepuce. Immediately afterwards the whole solution of continuity, in other words, the wound made by the operation and the remnants of the ulcer, should be cauterized.

M. Puche employs the following solution in the case of a serpiginous phagedenic chancre:

℞. Tart. Fer. et Potas. ʒ v.
Aq. Oct. i.

For fomentations.

Internally, he administers the following syrup:

℞. Tart. Fer. et Pot. ʒ v.
Aq. Canell. ʒ xiv.
Syr. Sacch. Oct. i.

Dose from five drachms to three and a half ounces a day, in a pint of tisane of gentian.

This syrup is particulary beneficial when there is chlorosis or anemia in connection with the phagedenic chancre.

Once I succeeded with the *emplastrum de vigo* in a very severe case of secondary serpiginous phagedenic ulceration, which resisted all other means. This ulceration occupied the external and lower part of the thigh, and the same side of the superior half of the leg. I then applied narrow bands of plaster, as in the case of atonic ulcers of the lower extremity. These bands were renewed every third day, and in less than fifteen days the phagedenic action was arrested, and the cicatrization far advanced. The success which I obtained by this method is favorable to its adoption in certain cases of phagedenic chancres. But, in order that this dressing *par occlusion* succeed, the chancre must be so situated as to permit its exact application.

ACCIDENTS OF CHANCRE.

PHIMOSIS AND PARAPHIMOSIS.

Phimosis.—This exists when the glans cannot be uncovered by the prepuce. There is generally a prolongation, and more or less contraction of this envelope; or the parts naturally covered by the

prepuce are swollen, or there are tumors and excrescences which impede the movements of this envelope. Its opening is sufficiently large to permit the emergence of the glans in its natural state; but tumefied, hypertrophied or covered with vegetations, it can no longer pass this opening. Phimosis is more or less complete, according to the contraction of the preputial overture.

This condition of the prepuce may be congenital; it may be produced by an irritation or ulceration, such as chancre. Most frequently it is the result of balanitis, rarely of urethral blennorrhagia, except when complicated with an inflammation of the lymphatics or peri-urethral abscesses. With a chancre, we often find phimosis; the former being surrounded with more or less induration, there is a thickening and want of flexibility; the end of the prepuce sometimes resembles a shell covering the glans. The retraction necessary to uncover the glans then becomes impossible, or dangerous, as it may give rise to a paraphimosis. Chancres are situated on the base of the glans, or more or less near the edge of the prepuce. If seated on the edge, and numerous, they may prevent the uncovering of the glans during their inflammatory turgescence, and at a later period by the cicatrices which follow, and which form a real stricture; thence a permanent accidental phimosis. Phimosis may become permanent from bands and adhesions which unite the prepuce and the glans in an unnatural manner.

The primary accidents are not alone the cause of phimosis: the eruptions called secondary, the mucous tubercle, more or less hypertrophy of the prepuce, a contraction, may render it less supple. The inflammations, chancres, and other lesions which produced a phimosis, may be aggravated by the phimosis itself; the effect here becomes the cause, and the complicative cause: thus, by an accidental phimosis, a certain degree of strangulation is produced; this produces more or less obliteration of the preputial cavity, and difficulty in the expansion of the inflamed tissues. Especially when the prepuce is inflamed, we sometimes find the skin of the penis drawn forward; the glans, as it were, is pushed backwards, and the prepuce projects in front of it, sometimes, acaccording to Hunter, for the extent of three inches. Occasionally this pedicle is a little twisted. Sometimes it happens that the preputial mucous membrane yields more readily than the skin; it then forms a kind of swelling, somewhat strangulated by a neck which is at the point where the skin naturally terminates. In both these cases the narrowing of the prepuce is considerable, and we cannot think of uncovering the glans.

The inflammation of the prepuce, at first erysipelatous, may assume a phlegmonous character: whence the abscesses which open on the skin or in the preputial cavity, according as the external or internal envelope yields. It often happens that both membranes yield equally; perforation of the prepuce then takes place by a slough, or by an ulceration which proceeds from within outwards. Most frequently matters occur as Hunter has so justly remarked: the glans enters the orifice of the prepuce and the

ulcerations; it fills the preputial cavity, and often so closely, that the pus secreted by these ulcerations cannot find a passage by its natural opening. A collection then forms behind the corona glandis, a kind of abscess, producing an ulceration, which extends both externally and internally, and penetrates the prepuce. This opening is almost always observed towards the end of the prepuce, which corresponds to the dorsum of the penis, and this, either because it proceeds from an ulceration or the separation of an eschar. When this opening is very large, the glans protrudes; the end of the prepuce is carried downwards, causing a prominence at this part, and giving the penis a bifid aspect. Nearly the whole of the prepuce has been observed to be destroyed; mortification likewise causes a true resection, a circumcision of the prepuce. There are other still more serious ravages; the glans may likewise suffer, either because the ulcer was at first seated on it, or because it spread from the prepuce so as to involve it; indeed, after the prepuce is opened, a portion of the glans is found to be destroyed. This is now a serious case; but it is still more serious when the urethra, the navicular fossa, and the corpus cavernosum are involved.

PARAPHIMOSIS.

Paraphimosis, or a strangulation of the penis behind the corona glandis by the ring of the prepuce, is an accident of grave importance, which may result from the inflammation accompanying chancres on the prepuce. We must distinguish between the paraphimosis which succeeds to an accidental or congenital phimosis, which is observed when the glans is forcibly uncovered, and who are attacked with a swelling of the penis; in this latter case, the orifice of the prepuce, which before was sufficiently large to permit the movements of the prepuce on the glans, strangles the latter at its base. The first strangulation, that connected with previous phimosis, produces much the most rapid and serious effects; it suddenly attains its highest degree of intensity; for the strangulation is here formed by the ring which girts the penis, and by the penis, which, as it were, presses against the ring. On the other hand, when phimosis has not previously existed, the penis alone is strangulated; as it swells, it comes gradually and slowly against the preputial ring, which was large enough to allow the movements of the penis in its natural state, but not when the latter has become preternaturally large. It will be well to remember this double mechanism of paraphimosis when we come to consider its treatment.

When the ring closely embraces the penis, when the paraphimosis is irreducible and complicated with the inflammation connected with chancres, the glans becomes more and more engorged, the cavernous body becomes indurated, and there is a struggle between the parts strangulated and those which produce the strangulation. The latter are generally the first to yield; in fact, the ring formed by the prepuce ulcerates, and becomes mortified; the

two layers, the mucous and cutaneous, of the prepuce are separated. But the patient does not always obtain from these morbid changes a relaxation very complete, and the penis does not return to its normal condition, for the resolution is slow; adhesions are established, which cause more or less apparent deformity, and which are attended with greater or less inconvenience.

Treatment.—1st. *Treatment of phimosis.*—When phimosis is accidental and highly inflammatory, when its primary cause is a chancre, the treatment is attended with very great difficulties. In the first place, we should resort to emollients, and to antiphlogistics, when the inflammation is severe, the swelling considerable and tense, when there is decided redness. If the subject be young and vigorous, we should not hesitate to commence by a copious general blood-letting. Leeches are also indicated; but there is danger of the inoculation of their bites, and an aggravation of the inflammation from these trifling wounds. They should therefore be applied at a distance from the penis—as, for example, on the perineum and the inguino-crural regions. We should not be satisfied with direct antiphlogistics, but should also act on the bowels, with saline purgatives, such as the citrate of magnesia, and Seidlitz water; after which we may resort to general bathing, cataplasms covered with Goulard's extract; injections between the prepuce and glans, at first of a narcotic and emollient, and afterwards of an astringent character. These injections may be rendered caustic, especially when we have reason to suspect that it is caused by a balano-posthitis.

If these means do not succeed in subduing the inflammatory accidents, if the pain is severe, and there is a difficulty in urinating, if there is an accumulation of pus within the prepuce, and this envelope is threatened with a perforation, and especially if congenital phimosis exist, many practitioners would imagine that there were sufficient reasons for resorting to an operation; some, indeed, would not require so strong an argument for using the knife. For my own part, I could never perceive the absolute necessity for performing this operation; I am afraid of thus increasing, instead of diminishing, the inflammation by the incision, a result which often happens. If it is decided to operate, to make an incision, it should not be limited to a very small extent of the prepuce; we should not open the abscess only, which is sometimes seated towards the base of the glans, for thus the accidents may not be at all arrested, and after their disappearance, the phimosis may return. The incision, then, should extend from the edge of the prepuce to the base of the glans. Still we have reason to apprehend that the wound thus made may be transformed into a vast chancre. It will be seen, therefore, that the advantages of the operation do not counterbalance its inconveniences, for the chancre in attacking the wound, is not confined in its ravages to the localities first invaded. For my own part, I always rely upon antiphlogistics, both direct and indirect. True, after the disappearance of the accidental phimosis, I have occasionally observed that a portion of the glans has been destroyed. These ravages

have likewise been observed by surgeons who have been in haste to operate. The prepuce has also been found perforated, notwithstanding the use of antiphlogistics, of topical applications and injections. For the most part, patients have come under my care at an advanced period of the disease. After the cicatrization of chancres, and the subsidence of the inflammation, it is easy to repair more or less perfectly the deformity resulting from this loss of substance in the prepuce. I repeat it, the situation of the practitioner is here very embarassing; I have given my experience, and I will not indulge in any criticism of the methods adopted by my opponents.

After the complete cicatrization of chancres, and the cessation of the inflammation, the phimosis remains when the prepuce has not been divided. This phimosis is congenital, or rather it is an accidental phimosis become permanent by the contraction resulting from the cicatrix. In both cases, after the disease has been cured, it is desirable to remove the deformity and thus prevent the chances of a new inoculation, for it is admitted that subjects affected with phimosis are more frequently infected than those whose glans is uncovered.

2d. *Operation for Phimosis.*—I will not here describe all the methods which have been proposed.* The excision of the prepuce, circumcision, having been commonly adopted, I will consider this operation. I add to the ordinary proceedings means of uniting the parts, as, no matter what method we employ, after the excision of the prepuce, the skin retracts towards the pubis, and its mucous membrane is left much exposed; a very large wound then remains, which inflames, suppurates, and is often the source of hemorrhage. Instead of excising this exposed mucous membrane, I reverse it so as to apply it higher on the skin, when I unite it by sutures, or, what is preferable, the spring sutures. The suture may be applied as the parts separate, or, what is better, the threads may be passed before excision is made, which may be performed according to two different methods.

A. First Method.—A line is traced with ink on the skin of the prepuce, in the direction of the corona glandis, having a lozenge-shaped form. This line may be traversed with points of suture. The skin should be drawn neither in front nor behind the glans. With a pair of dressing or spring forceps, we seize the dorsum of the penis, near the frænum, and, in an oblique direction, the whole of the prepuce in front of the black line. Whilst the operator with the forceps stretches the prepuce a little forwards, an assistant seizes the sheath of the penis near its root, and draws gently towards the pubis. The threads are then passed transversely, that is, by crossing the forceps on the dark line, they will be five millimetres from each other. The extremity of the prepuce seized by the forceps is still drawn a little forwards; then, with a pair of strong scissors, such as are used for hare-lip, the prepuce be-

* Vide my *Traité de pathologie externe et de médécine operatoire*, t. v. 3d ed. I transcribe from this work the description of the proceedings which I employ.

tween the threads and the forceps is at once divided. This circumcision being completed, the cavity of the prepuce is more or less opened, we see that the threads are passed on the glans, and in a direction perpendicular to the meatus urinarius. These threads are then divided in the middle, and each forms two handles, one on each side of the glans. Thus, if four threads are passed, we may make eight sutures, four on each side. I use flat needles, lancet-shaped, and very fine. I remove the sutures on the fourth day.

This method is much more easily executed, if, instead of first passing the threads through the prepuce, we push the needle no further than is necessary to discover its point on the opposite side to that on which it was entered. The needles then cross the direction of the forceps, and the incision is made between them. The incision is then more neatly and easily made. After the excision of the prepuce, the body of the needles is seen traversing the preputial cavity; each needle is drawn by its point, and its other extremity, then presenting to the surgeon, enables him to grasp the thread. Each needle being thus seized, the operation, in other respects, is such as I have described.

B. Second Method.—The black line is traced, as in the first method. A grooved director is introduced within the prepuce, and its handle confided to an assistant; he inclines it to one side; the beak of the director causes the prepuce to project in an opposite and distant direction, at the point against which it presses. With the same kind of needle as that before used, a thread is passed between this instrument and the glans. There is then a handle of thread passed in the direction of the black line. The needle is first entered towards the dorsum of the penis. The sound is pushed a little more towards the frænum, about two lines from the first stitch, and the same needle and same thread is passed behind the instrument; finally, the prepuce will be surrounded with a suture with points passed. The thread describes a spiral shape, and forms a handle within and without the prepuce. The forceps should be applied as I shall presently describe; and with large scissors the extremity of the prepuce between the forceps and the spiral represented by the thread, is removed. The latter should be long, as, after the circumcision has been performed, each loop divided on the cutaneous and the mucous surface, will furnish two ends of thread, which will serve to make a stitch.

I admit that it requires much time to execute the proceedings; but they possess unquestionable advantages. The first results, so far as its appearances are concerned, could not be more satisfactory. After the operation no dressing is required; a compress saturated with cold water alone, is applied to the penis; and we have no hemorrhage to dread. Now, we know that hemorrhage is a very frequent result of the other methods. On the fourth day the sutures are removed. After every operation performed on the penis, the process of cicatrization may be impeded by erections. But the application of a few leeches to the perineum, with the use of pills of camphor and opium, and some attention to regimen, will guard against this accident.

C. Third Method.—Use of the spring sutures (*serres-fines*).—The spring sutures were first used for the purpose of uniting the wound made in the operation for phimosis. I have stated that the sutures were to be removed on the fourth day. Since that I have removed them at an earlier period; sometimes I have left them for only twenty-four hours, and this too without interfering with the union of the parts. I have therefore asked myself, if, for so short a time, it was necessary to inflict the additional pain of the suture, and if the *little fingers* could not patiently keep the lips of the wound united, since union can take place so promptly. I then had the spring sutures made by M. Charrière. These instruments, which were of steel, being in my opinion too heavy and too difficult of retention in the same place, I furnished M. Luër with the idea of spring sutures, *serres-fines*, here represented: *a*, is a

spring suture, the branches of which are still uncrossed; *b*, branches crossed, instrument closed; *c*, instrument opens when pressure is made on the great inferior ring; *d*, the handle which enables us to seize the instrument. These are small spring sutures. M. Luër makes them at least one half smaller. Oculists find them very serviceable in their operations on the eye-lids. When the smallest size is used, a *porte serre-fine* becomes necessary, for the fingers cannot retain their hold, and they conceal the point to which we would apply them. M. Luër has contrived a very ingenious instrument for the above purpose. In order to obtain a complete and speedy union, it is desirable that the skin and mucous membrane be perfectly applied to each other. Whilst the surgeon takes hold of the instrument and presses on the large ring so as to open it, the assistant, with two small dissecting forceps, one in each hand, applies the skin and mucous membrane accurately together, and when they are nicely adapted to each other, the surgeon applies the instrument, after which the pressure is discontinued. The two membranes may also be well adjusted to each other, by pressing on the middle of the wound, and according to its direction, with a small grooved sound. We thus replace the cellular tissue which has a tendency to portrude, and prevent it from interfering with the union of the wound. Indeed, if a portion of the cellular tissue interpose between the lips of the wound, union by the first intention is impossible. I will not disguise the fact that this method is difficult and delicate in its application; but a cure may be thus obtained in twenty-four or thirty hours. Such success has attended not only my own practice, but that of all my *confrères* who have tried to apply these instruments *with care*.

Permit me to refer to what constitutes a real improvement in the art of correcting the deformities of the penis. When I entered on the service of the *Hôpital du Midi*, circumcision was performed, according to the method recommended by M. Ricord, who

then stated in his work: "The results of circumcision after my method, have appeared to me more favorable than those obtained by other proceedings. A cure has been effected in from twenty to twenty-five days."*

Now a cure has been obtained with these instruments in from twenty to twenty-five hours.

3d. *Treatment of Paraphimosis.*—We shall commence with sedatives, and antiphlogistics, as recommended in the treatment of inflammatory phimosis, connected with more or less strangulation. Before we attempt reduction, it is well to remember the two varieties of paraphimosis which I have established, that which has been preceded by phimosis and that which may produce it, the glans being naturally uncovered. It is certain that if we reduce paraphimosis on the subject who has congenital phimosis, he will have a vicious conformation, at the price of very severe pains. It is better then to operate, and we should not only incise the ring by which strangulation is produced, but extend the incision equally in front and behind the glans. This is the course to be pursued when paraphimosis is irreducible. In other cases, punctures over the tumefied and œdematous parts, the application of cold compresses, and circular compression, produce generally good effects.

M. Seutin has proposed, for the purpose of acting on the glans, reducing its volume, and favoring reduction, the use of forceps with spoon-like ends, which will closely embrace this organ, and effects complete compression, more uniform than that produced by the fingers of the surgeon. In every case when the disease is complicated with chancre, the latter should also receive our attention, and we should not be confined to local treatment.

CHAPTER VI.

BUBO.

Bubo is an engorgement of the lymphatic vessels, and principally of the lymphatic ganglia; its most frequent cause is the action of the syphilitic virus on these organs.

Seat.—As the word bubo denotes, it is with the engorgement of the ganglia of the groin that we are now chiefly concerned. However, almost all the ganglia which have their efferent vessels not far from the skin and the origin of mucous membranes, may become engorged as the result of inoculation from some point of the integuments. Besides the buboes of the inguinal region, those of the neck of the axilla, and the fold of the arm, are those which are most frequently observed. In the groin there are still differences of seat: thus, buboes may be above or below Poupart's ligament; the first we called *crural;* the others are called *abdominal;* when the latter are near the median line, the root of the penis,

* *Traité pratique des maladies vénériennes,* p. 775.

they are known as pubic buboes. I shall soon speak of the influence of the position of chancres on the seat of buboes.

Causes.—Sex seems here to exert a decided influence; at least twice the number of buboes are seen in the male than the female. Different grades of society also show a great disproportion; thus the working classes, those who are careless of their persons during the existence of a chancre, and those who are engaged in very hard labor, are the persons most liable to be affected with chancre. To be persuaded of this difference we have but to compare the patients treated in hospitals with those in private practice, and note the predisposing causes.

The syphilitic virus is the principal cause of buboes; but it does not always reach a ganglion in the same manner. It may involve a gland after having ulcerated or inflamed the tegumentary surface with which it comes in contact, or indeed after a traumatic solution of continuity, or even without any alteration of the integuments, in other words by *physiological absorption.* This would imply that a bubo may follow a chancre, a blennorrhagia, an inoculated wound, and may even occur without any of these lesions, that is to say it may be primary (*d'emblée*).

Chancre is certainly the most common starting point of a bubo. Hunter established this fact completely. M. Philip Boyer maintains that chancre is always followed by bubo, which is equally incorrect with the opinion entertained by others, that there can be no syphilitic chancre without a bubo.

Bubo is generally observed during the earliest stages of chancre, that is during the first week; it may not occur until one or two months after the natural disappearance of chancre, or after its cicatrization has been effected by remedial measures. I do not believe that the speedy cicatrization of a chancre has any particular connection with the production of a bubo. Occasionally a very long time passes between the cicatrization of a chancre and the appearance of a bubo, proving that there is even here a period of incubation.

In the male, buboes most frequently follow chancres on the prepuce, whilst in the female they follow those seated near the meatus urinarius. The position of a chancre on the penis may have an influence on the seat of a bubo. The connection here, however, is not so precise as to furnish a categorical answer to the question; given the seat of chancre, what will be the seat of bubo? It is known only that bubo generally occurs on the same side as the chancre; thus the ulceration of the left side of the prepuce is followed by a bubo on the left side of the groin, and *vice versâ.* However, the contrary may happen from a decussation or anastomosis of the lymphatics. When there is a chancre on each side of the prepuce, there is generally a bubo in each groin. A chancre of the frænum gives rise indifferently to a right or left bubo, sometimes to both. Notwithstanding all that has been said, even numerous chancres may exist without being followed by bubo, as is at present exemplified in Ward No. 10 of my service. It must be well understood that we are not to confound with buboes ganglia

only a little more enlarged than natural, and which of course may have existed without any manifestation of chancre.

Blennorrhagia is less frequently the starting-point of bubo than chancre, and when adenitis is developed, it is then said to be the result of sympathy or extension of the irritation. A really syphilitic bubo, arising from the absorption of the virus, it is said can only follow a urethral chancre. This hypothesis I have already combatted, as I have shown that there may be a really syphilitic blennorrhagia without a urethral chancre.

Bubo may also result from the physiological absorption of the virus; that is, without having been preceded by the three orders of lesion already indicated, viz. without inflammation, ulceration, or solution of continuity. This is proved by analogy, by authorities, and by facts. It is well known that a vast vascular network covers the whole body; the virus penetrates this network; it is so subtile that it may traverse the most external layer of the integuments, without any solution of continuity, and, as it is called, by imbibition. The network to which I have alluded sends out branches of lymphatics, which become loaded with virus, and bear it to the vessels and the glands. The whole of this route may be traversed without any lesion of the conducting vessels, because they do not react. But if the first network reacts, we generally have a chancre; if the vessel, a chancrous inflammation of the lymphatics; if the gland, a chancrous adenitis, a veritable syphilitic bubo. Some writers on syphilis do not fully admit this; they acknowledge only that a lymphatic vessel may be traversed by the virus without suffering the least injury. Now the same observation applies to the other tissues. Analogy, indeed, proves that the virus may pass from the skin to the ganglion without wounding any part, and the facts upon this point are conclusive. Thus, when variola is not inoculated (and it is no longer inoculated), how does the virus enter the system? By the same avenues as the syphilitic virus, and no previous solution of continuity is required. Does not the virus of glanders sometimes affect animals and man without any previous solution of continuity? Is there not a glanders *d'emblée?* Consult on this subject the most weighty authority—Hunter. Now, Hunter admits the bubo *d'emblée* in the sense received by us. 'Twas particularly when treating of buboes that he pointed out the four surfaces by which pus may be absorbed: 1st, by an ulcer; 2d, by an inflamed surface; 3d, by a traumatic surface; 4th, by a common, that is to say a sound surface. These three kinds of absorption are not merely theoretically indicated only. Hunter fully appreciated them, and studied them in view of facts. He clearly showed that absorption most frequently occurs by an ulcerated surface, and that by sound surfaces it is least frequently observed. On this point the English surgeon has shown an extreme distrust and the greatest hardihood.

He advises, for example, that women should be avoided, as it is never known whether they are or are not affected with blennorrhagia; he remarks that before an opinion is formed, they should

be most carefully examined, and then we shall often discover that a small chancre is the cause of the infection, a circumstance that has more than once happened. "We should," he observes, "pay especial attention to every circumstance connected with a case of this kind." (p. 480.) Hunter, moreover adds, that every engorgement in the groins is not a venereal bubo. Thus, we here find a great genius, a keen and accurate observer, who admits the existence of the primary bubo. We may assert that this doctrine is now becoming again in vogue, since this form of bubo is admitted not only by those who have always sustained this opinion, but by the disciples of M. Ricord; for example, by M. Reynaud (*de Toulon*) and M. Gibert. M. Reynaud declares very positively that he has treated persons who, after a suspicious intercourse, had frequently examined their penis, without discovering anything; and that they became affected with buboes which were followed by very decided consecutive accidents (p. 55). M. Gibert positively observed a case of primary bubo, the matter of which he successfully inoculated. M. Ricord very simply objects to this, that M. Gibert deceived himself, or was mistaken. Observe that this reply, especially when politely stated, might be made to every observer; to MM. Lagneau, de Castelneau, Cazenave, Baumés, &c. In the work of the last-named author, cases sixth and seventh leave nothing to be desired on this subject, since they were inoculated with success.

[During our recent visit to London, Mr. Lane very politely showed us, at the Lock Hospital, two cases of the bubo *d'emblée*. In one of these cases inoculation had produced the characteristic pustule. The brief notes of the case, as made under the supervision of Mr. Lane, are as follows:—Thomas Hughes, æt. 22, admitted into the Lock Hospital, May 5th, 1853. Six weeks previously had last connection. At the time of our visit, 26th May, he had had a bubo for a month. No trace of a sore on the penis or any other point. Both Mr. Lane and myself, after diligent inquiry, could detect no other symptom. Matter from the bubo was inoculated on the left thigh on the 21st May. On the 26th, characteristic pustule, which we saw, was *perfectly* developed, and Mr. L. directed it to be cauterized at once. Mr. L. informed us that cases of *primary* bubo not unfrequently came under his observation, but that this was the first instance in which he had produced positive results or inoculation. M. Ricord, in his Treatise (*Am. ed.* pp. 187, 190), has recorded eight cases of the bubo *d'emblée;* and Dr. Judd, in his works on the venereal, has detailed several of the kind. M. Ricord, at pp. 74, 75, of his Treatise (*Am. ed.*), has given us incontestable proof of the existence of this form of bubo. He quotes authority after authority in support of what, in his Letters (XXV.), and his *Notes* to *Hunter*, (2d ed. p. 521,) he treats with ridicule; indeed, in referring to the successful inoculations of M. Gibert, he very complacently observes, that *he either deceived* himself, *or was deceived* (*M. Gibert s'est trompé ou a été trompé*)!

Dr. Graves, in his Lectures (*Dub. ed.* 1848, vol. ii. p. 385), quotes from Dr. Roe's Report of venereal patients treated in the 38th

Regimental Hospital, the following: "Buboes were often seen without any ulcers on the penis," &c. M. Ricord admits in his *Treatise*, p. 222, *Am. ed.*, the devolopment of abscesses formed by the imbibition of matter from an adjacent chancre, yet, in his *Letters* (XXV.), he denies the possibility of such imbibition!—G. C. B.]

For my own part, I have seen several instances of the primary bubo. As I did not inoculate the primary accident, I waited the development of constitutional disease. In Ward No. 11 there was a case of double bubo, on a subject whose glans penis was quite uncovered; he had had these swellings for five days; he watched himself carefully; the buboes were positively the first manifestations of the disease; he had neither a discharge nor a sore. I was enabled to watch this patient for a long time, and I saw a papular eruption developed. Another patient entered with a bubo still more recent than the first; there was nothing in the antecedent circumstances that could lead to the suspicion of any other primary symptom; only, he described perfectly a roseola which had disappeared. This I did not see. But a swelling afterwards appeared in the superior maxillary bone, which resulted in necrosis, and I extracted a fragment of bone to which were attached two of the teeth. The separation of the sequestrum, and the healing of the wound, were remarkably rapid, under the influence of the iodide of potassium.

Besides the buboes from absorption of the syphilitic virus, it is admitted that there are those produced by an extension of irritation or inflammation, or by sympathy, independent of syphilis.

The virus, having acted on the whole system, may cause an enlargement of the glands and establish a consecutive bubo. In fine, bubo is said to be inflammatory or indolent, acute or chronic, according to the prevalence or absence of the phenomena of inflammation. Still other divisions have been made; these it is unnecessary for me here to notice, as I am now considering these swellings in an etiological point of view.

Symptoms.—I shall first describe the more general symptoms; in treating of the varieties, and especially of *inflammatory* bubo, I will complete the sketch.

Bubo is occasionally preceded by febrile excitement; this ceases only after the appearance of suppuration. In corpulent subjects, especially females, fever sometimes exists for several days before a bubo is suspected, particularly when it is small. The tumor is generally of an oblong shape, its grand axis following the direction of the bend of the groin. In other situations, as the elbow and the axilla, it assumes a globular form. If the swelling consist of one gland alone, if it be already inflamed, it is of a regular uniform shape; if, on the contrary, several glands are affected, and inflammation be still absent, the swelling is more or less irregular in form. Sometimes the tumor is divided into two segments —a superior, and an inferior; this disposition is observed when the very dense cellular tissue at the bend of the groin has resisted the development of the gland; it then produces in this situation a kind of strangulation, a depression, and the tumefaction takes

place on the side of the abdomen, or the thigh, where the adhesion of the skin offer the least resistance.

Varieties.—Buboes have been divided into many varieties, according to the phenomena, and the symptoms which they present. I shall describe but two varieties; the inflammatory, and the non-inflammatory or indolent bubo, and in my description of these, I shall point out the characters of the sub-varieties.

1. *Inflammatory Bubo.*—Bubo is generally the result of the action of the syphilitic virus on a portion of the lymphatic system; it is the *bubo from absorption.* But this absorption may occur on an ulcerated, an inflamed or a sound surface. In the latter case, it is called *primary* bubo. I have already stated, that this kind of bubo was admitted by Hunter, that it was consistent with reason, and that it had been established by clinical facts, and by experiment. Whatever the surface of the absorbtion, the virus generally passes at once to the lymphatic glands, by their afferent vessels. These vessels are generally insensible to the poison which they carry; if they do re-act, a virulent angioleucitis is developed, which may be regarded as a bubo of the lymphatic vessels. It is well here to note the possibility of the virus passing through the lymphatic vessels without necessarily infecting the vessels themselves, a fact admitted by those writers on syphilis who deny the existence of the primary bubo, and this too for the reason that the virus cannot penetrate our tissues unless by means of an ulcer! Now we here find this same virus traversing the lymphatic vessels, leaving them, for the most part, perfectly sound.

It has been maintained, that in the bubo from absorption one gland only is affected, except in the case of very large chancres, which may communicate with a great number of lymphatic vessels. Nevertheless, there is in my service a patient affected with chancres on the penis; he inoculated himself with these chancres through a crack on his finger; at this point was a chancre almost imperceptible, and yet it was followed by a bubo at the bend of the arm, and in the axilla. We here see that the virus passed far beyond the first gland that it encountered. Another erroneous idea is, that when the virus is once beyond the lymphatic vessel and gland, it can be no longer inoculated, or transmitted. When once this virus has entered the circulation, it may still produce effects, even on the individual in whom it has been absorbed, but not on another person, for these effects, which are secondary accidents, cannot be inoculated, nor are they contagious. This serious error, against which clinical facts daily protest in vain, has been completely refuted by experiment. It has, indeed, been proved that a sound person may contract syphilis not only from the morbid secretions furnished by secondary accidents, but from the blood of the individual affected with these same accidents. Besides, who will say that the virus can reach the gland only by means of the lymphatic vessels? Every circumstance goes to show, on the contrary, that this poison may directly enter the circulation, and through the latter, reach every part of the system.

Bubo may likewise occur independently of any specific syphilitic

action; it is then maintained that the inflammatory radii from a chancre or an inflamed surface involve the glands; in which case it is called *bubo from extension.* The *sympathetic* bubo should be produced by an irritation reflected from the point primarily affected to the gland. We may remark in passing, that this *sympathetic reaction* has been singularly abused. That bubo may be produced during the existence of a chancre or an inflammation of the integuments from which lymphatic vessels arise leading to the affected gland, can be admitted according to our general ideas of morbid sympathies; but it is difficult, if not impossible, to acknowledge the sympathetic bubo without a starting point. For example, when buboes have been observed, without any previous lesion on the genital organs, without ulceration or inflammation, it has been pretended that they were sympathetic! But sympathetic of what? Where is the starting point of this sympathy? What directs it to the gland? They conclude by answering, coïtus, a single act of sexual intercourse! This arises from denying the absorption of the syphilitic virus by a sound surface, in other words from closing their eyes to facts!

However it may be, buboes by extension, sympathetic buboes, can only be, I repeat it, inflammatory accidents, and not syphilitic; compared with buboes by absorption, they may be regarded as benign, for they contain no virus, and are not inoculable, as is the case with buboes by absorption. It will be remarked that buboes by extension, by the propagation of the inflammatory foci, those that are regarded as the most common among benign buboes, occur precisely in those cases where chancre is but little inflamed, often when it is cicatrized, and almost never when the ulceration is really complicated with inflammation. Observe what occurs after operations on the penis, such as extirpations, ligatures, cauterizations of excrescences, cauterizations sometimes deep, incisions, excisions of the prepuce immethodically made; now these lesions, each of which always produces an inflammation more severe than common chancre, are yet followed by no adenitis, by no bubo from extension or sympathy; whence I conclude that there is nothing more rare than what is called *benign bubo*, that is, adenitis, a simply inflammatory adenitis, either from extension or sympathy. I believe even that the last, having no starting point, is entirely hypothetical.

I proceed to describe the several phases of inflammatory bubo. We shall find even here, sub-varieties which have been separately described by certain authors. Inflammatory bubo is sometimes preceded by a fever, which continues whilst the swelling is increasing. We have then, as I have already stated, primary bubo. The patient complains of an unusual sensation in the region which is to be the seat of the inflammatory tumor; to this succeeds a pain, or rather it extends along the thigh; there is pain and difficulty in motion. The gland or glands are tumefied; at first they retain some mobility, which in a short time is lost. The phlegmonous period has already commenced; for, at the same time that the glands enlarge, in the majority of cases the cellular tissue becomes involved in the inflammation, the progress of which is

then still more rapid. The tumor presents an elastic feel, which differs from the indurated thickening of glands and cellular tissue. The skin is of a deep violet red color over the centre and around the tumor. The pain is generally exasperated and shoots in different directions, or it may remain unchanged. Its violence does not always correspond with the severity of the inflammation. In fact, we may yet hope to disperse these tumors and prevent suppuration, especially if the most absolute repose be observed.

The inflammatory phenomena are more decided and produce greater reaction when the glands affected are deeply seated; their enlargement is then prevented by aponeurotic layers which bind them down, and produce some symptoms of strangulation. If the inflammation continue, as is most frequently the case, pus forms, and then we have a *suppurating bubo.* In the majority of cases the matter forms in the cellular tissue, which becomes agglomerated; fluctuation is then easily and promptly detected, for the matter is more superficial and the abscess is unilocular. The skin is of a deep violet red color. When the suppuration, instead of being peri-glandular is intra-glandular, the pus may at first form several little foci in the organ; its presence is then difficult of detection on account of this circumstance, and because it is more distant from the surface. It afterwards becomes collected in a single cavity hollowed out of the gland, and beneath a certain thickening of the parts we may perceive fluctuation, which becomes more evident when the intra-glandular foci communicate with the pus of the cellular tissue surrounding the ganglion.

When pus has formed and become collected, both general and local excitement cease, and the movements of the thigh are less difficult. But the skin becomes thin and bare, of a deeper color, and if in the first stage of suppuration, some hope may still remain that the tumor may disappear without any solution of continuity, this hope is now entirely lost; indeed, if the tumor be not opened it will open spontaneously. When the inflammation has been severe and acute the pus has the qualities of what is called good pus, phlegmonous pus; if the inflammation has progressed rather slowly, and if it has been, as it were, arrested from time to time, as often happens when glands are inflamed, the pus is then thin, mal-assimilated, and filled with coagula. The pus may assume this double character when there has been a simultaneous suppuration of the gland and the cellular tissue by which it is surrounded. In all cases it may be more or less mixed with blood, occasionally it happens even, that the cellular tissue, or peri-glandular tissues, contain nothing but blood.

Whether we do or do not interfere, though the tumor be opened early or late, the solution of continuity may assume the characters of chancre; we have then what is called *glandular chancre,* which may present the different aspects that have served to establish the varieties of chancre. Thus this solution of continuity may have the aspect of common chancre, or it may be more or less indurated, and thickened at its base and borders, corresponding to the indurated chancre; finally, mortified portions

may be detached, the ulceration spread rapidly over one or several points, and resist all treatment: consequently, we should have the phagedenic chancre in all its different forms; and here the same hygienic circumstances shall prevail, the same idiosyncrasies, the same therapeutic measures, which exerted an influence over the characters assumed by the ulceration, absolutely as I have described when considering the causes of the deviation in the form of what is called *regular* chancre.

If the bubo be opened with a bistoury or lancet, if the opening be made at a proper time, and in the manner that I shall hereafter describe, there is a strong probability that the skin will contract its natural adhesions, and that the wound will soon become healed, without leaving any trace of deformity. If, on the contrary, we wait for the swelling to open spontaneously, if it be opened at too late a period, or in an improper manner, the skin will not become adherent, or it will be but imperfectly re-established: more or less of it will slough, and there will be a great loss of substance, or many openings, which will remain a long time fistulous. In both cases, the reparation of the wound will be slow, an unequal, deformed, and strongly-marked vicious cicatrix will remain, to remind the patient of an event which, in the majority of cases, he would prefer should be unknown.

2d. *Non-inflammatory or Indolent Bubo.*—This generally consists of several enlarged glands, which are movable, not painful, and do not, at the commencement, present any phenomena connected with true inflammation, except the increased size. A great importance has been attached to bubo in forming the diagnosis of indurated chancre: M. Ricord even denominates it the *necessary companion* of this disease.* But he must know that a similar glandular enlargement may be observed in strumous subjects who have never had a chancre; it may exist in the other varieties of chancre, in that called *regular common* chancre, which is regarded as deprived of all specific induration; add to this, the fact that this same engorgement differs in no respect from consecutive bubo, since it exists in connection with indurated chancre, itself an indication of the existence of the diathesis, being observed also, with the train of accidents called *constitutional,* and the value of the indolent bubo in the diagnosis of syphilitic ulcerations is materially diminished. The indolent bubo, consecutive or primary, may assume an inflammatory character; but its pus is not considered inoculable.

Diagnosis.—We are now particularly concerned with inguinal bubo. Let us first exclude hernia, aneurisms, and abscesses, by congestion, the tumors produced by which are easily distinguished from bubo. The marks of some wound, or laceration, certain cutaneous inflammations, a furuncle at some point corresponding to the distribution of some lymphatic vessels leading to the glands of the groin; the knowledge of these lesions will prevent us from confounding the glandular engorgements which sometimes result

* *Notes to Hunter,* p. 552, 2d ed.

from them, with syphilitic buboes. The difficulties are not great when, with the bubo, other syphilitic accidents coincide; if the latter are consecutive, the bubo is constitutional, indicative of the diathesis; if the accidents are primary, bubo might be indolent in the case of indurated chancre, or inflammatory in the case of regular, common chancre. The difficulty is real, and not easy to be surmounted when we cannot discover the starting point of the inflammation which has invaded the gland, when there is nothing on the integuments to indicate that the virus has penetrated the system, when, in fine, there is a primary bubo. Some have thought that these difficulties might be obviated by resorting to inoculation, which should produce a chancre, in the case of a syphilitic bubo, and which will fail if the contrary be true. But this proceeding cannot be adopted except where suppuration is already established; it is important to decide before this event has happened, and even when it has, inoculation is difficult and uncertain. Indeed, in the case of a true syphilitic bubo, suppuration may have invaded but the cellular tissue surrounding the gland, when it is supposed that the gland itself has suppurated. In such a case inoculation would lead to no result, for the pus of the gland alone contains the virus. If we pass through the cellular tissue, and reach the suppurating gland, we cannot be sure of obtaining the virus, as the bubo may be composed of two glands, each of which may contain different kinds of pus; the matter obtained may come from the gland, which does not contain specific pus, thence another failure of inoculation, and that, too, in a case where there is really a virulent bubo. Further still, we are not even certain of obtaining virus in extracting matter from a gland, the suppuration of which has been specific, for we may be too late, that is, at the time of reparation, when the pus secreted is no longer virulent. Inoculation, therefore, does not remove the difficulties; it rather creates more. Clinical experience must furnish us with the principal information required to form a diagnosis; it is the combination of certain constitutional and local symptoms, together with the antecedent circumstances, that can lead to practical truth. In the last analysis, what tumor may be confounded with bubo? The scrofulous. Now, the scrofulous, or, if it please, the strumous tumor, occurs in subjects who have had certain antecedents from infancy, from puberty, whose signification is known, and their systems have had certain marks which cannot deceive those who have studied the temperaments. Again, it is rare that there is the tumor in the groin only; but we find them in other regions, as the neck, for example; and in the groin, even, we find an enlargement of more than one of the deep-seated glands, as well as in the pelvis; in fact, it is rare that the strumous bubo does not involve the supra-aponeurotic glands. In its development and progress, it resembles other strumous tumors. The engorgement begins in one or two glands, it forms slowly, and is attended with little or no pain. This indolent character remains for a long time, and the skin continues sound, not changing even its color. But under the influence of a physical cause,

or some excitement of the system, sometimes without any appreciable cause, the inflammation attacks the glands already engorged; the pain is now severe; there is an erysipelatous redness of the skin, and thickening of the cellular tissue. These phenomena may be but temporary, and the tumor may thus be many times renewed. It finally softens, and forms not one but several foci connected with the lobes of the different glands; and as the deep-seated glands of the groin and pelvis may be simultaneously affected with the superficial, the suppuration may be very profound.

In describing the suppurating inflammatory bubo, it must have been remarked that it was attended by a different train of phenomena. The tumor, in this variety of bubo, is of limited size, its progress is acute, its suppuration rapid, and generally it forms but one focus of matter. After the bubo is opened, it does not present that successive degradation of strumous pus, which is at first thick and well assimilated, then demi-serous with flakes, and which always becomes more liquid and of a redder color. When the bubo is once opened, be it strumous or venereal, it becomes an ulcer which in both cases may possess analogous characters, but between which differences exist, which I will indicate. Both ulcers may have a fungous base, of a dull gray color. But in the ulcer from a venereal bubo, a false membrane covers the base, and we may remove it by gentle rubbing; then the color of the wound is of a more or less lively red. In the strumous bubo, the base of the ulcer, on the contrary, is formed by the gland itself, which is more or less fungous, and has the gray color, which cannot be made even momentarily to disappear. These glands more or less hypertrophied, sometimes rise above the level of the skin, which tends greatly to retard the healing of the ulcer. Further, the skin around the ulceration is thin, not red, but more or less livid. When the ulcer is venereal, there is always more or less inflammatory turgescence, and the cellular tissue of the base, that which lies under the skin, is more or less rigid; the gland does not so soon become exposed. Venereal ulceration, besides, makes too rapid progress in the commencement to be afterwards suddenly arrested, and then to march speedily towards reparation. The contrary is true of strumous ulceration, which is slowly established, which progresses slowly, and heals still more slowly.

But, unfortunately, both the strumous and the venereal diathesis may be so blended, that the bubo having the characters of both, may render the diagnosis very difficult. Hunter very justly remarked: "There are buboes which are nothing else than a gland endowed with a scrofulous disposition, in which the morbid action has been provoked by venereal irritation."* Occasionally we meet with a bubo which has been preceded by a chancre on the penis, or a urethral blennorrhagia has inflamed, suppurated, and opened in the same manner as a syphilitic bubo; the strumous engorgement then manifests itself, and it assumes the char-

* *On Bubo*, chap. iv.

acters which I have described. Here the venereal accident, on the part of the penis, has excited the scrofulous disposition of the glands of the groin, and has given to the strumous adenitis an active character, which did not belong to it before the venereal irritation was superadded. There are cases where the bubo is truly venereal; its onset, its progress, the ulceration which invades the skin, all prove it; we then have evidently what is called a glandular chancre. But the scrofulous principle which, so to speak, had remained in its essence, began to act, and then it could produce two effects: it might complicate the venereal ulcer, cause it to be transformed into a phagedenic ulcer, which is a very grave affair; or, the venereal symptoms disappearing, scrofula gained the ascendency, the ulcer and the tumor assumed the characters which I have just assigned to the strumous ulcer of bubo.*

From what I have stated, it will be seen that the difficulties in forming a diagnosis are real; and, in the present state of the science, it is not possible entirely to remove them. But the knowledge of these difficulties will cause the young practitioner to be at least guarded in announcing his opinion, to be prudent in his treatment, and to be discreet in his remarks before interested persons or in courts of justice. Thus, what we should here avoid is being too absolute, that is, when we come to the treatment, we should not persist in the administration of mercury when several courses of this mineral have not had a happy result. We should then remember the possibility of a strumous complication, and act accordingly.

[In the *Compendium de Chirurgie Pratique*, of Berard and M. Denonvilliers, vol. 1st, p. 43, a case is reported which occurred at the *Hôpital du Midi*, in 1812, and in which one of the *internes* opened an aneurismal tumor, supposing that it was a bubo!—G. C. B.]

Prognosis.—This may be inferred from what I have stated in speaking of the different varieties of buboes and their complications. The most terrible of all is the strumous complication which may convert the ulcer of a bubo into a phagadenic chancre. We then observe those extensive denudations of the groin, which invade even a part of the abdomen, and exhaust the unfortunate patient by his sufferings and the abundance of the suppuration.

[Mr. South states, in the second volume of his edition of *Chelius* (p. 90), that he has known a sloughing bubo destroy life, by ulcerating the femoral artery.—G. C. B.]

Treatment—Nicholas Massa recommended that buboes should be allowed to suppurate; he regarded them as a kind of emunctory destined to rid the system of the poison and to render the patient less liable to consecutive accidents, to the confirmed pox. This opinion, which others would call error, has always found supporters. Even at the present day we find in the work of M. Baumés, that subjects in whom buboes have suppurated, are less

* Vide an article by M. Gabalda, in the *Bull. Therapeut.*, Jan. and March, 1846.

frequently troubled with consecutive accidents. To this it has been replied, that suppurating buboes coincide with the common chancre which does not generally produce the pox. I have already shown that this assertion is not true.

[It is to be regretted that upon this, as on so many other doctrinal points, the views of as weighty an authority as M. Ricord, should be so contradictory. For example, in his Treatise (*Am. ed.*, p. 76), he remarks: "Experience having shown that buboes which do not inoculate are never followed by secondary accidents." Now in his *Letters*, (xxvii., p. 199,) he asserts that: "Every bubo which suppurates specifically, that is, which furnishes inoculable pus, is never followed by constitutional infection!" Which of these doctrines are we to believe? One thing we know to be true, viz., that constitutional infection sometimes occurs after a suppurating bubo, whether such suppuration be specific or non-specific.—G. C. B.]

For my own part, I will not here discuss the question, whether it is better to promote or to prevent suppuration in a bubo; for I believe it to be almost impossible by any of the ordinary means of treatment to obtain either of the results. The bubo that should suppurate, will suppurate, no matter what we do, and the bubo which should disappear by resolution will thus disappear in spite of the application of the ordinary suppuratives, except they be too violently used. Does it follow that I would dispense with the treatment of buboes? No. I believe, on the contrary, that we have a preventive treatment; a palliative treatment, and a surgical treatment to employ.

1st. *Preventive Treatment.*—Among subjects affected with chancre, there are those who greatly neglect hygiene, who do not observe repose, who labor, and who abandon themselves to pleasure; these are the persons in whom we most frequently meet with buboes. As to the frequency of this accident, there is a marked difference between the working population who frequent our hospitals, and the patients which we treat in private practice. This fact, to which I alluded in speaking of the etiology of buboes, should induce the practitioner to recommend hygienic measures to the patient, and to insist that he avoid fatigue, and observe the most absolute repose. A well directed local treatment of chancre may prevent the formation of a bubo. M. Ricord advises that we should not irritate a chancre. I would remark that it is a practice with him to cauterize them, and to dress them with aromatic wine.

2nd. *Abortive Method.*—This consists in cold applications, the local abstraction of blood, and the use of compression. A kind of cauterization with a solution of fifteen grains of the bichloride of mercury to an ounce of water, has also been employed. The skin is first removed by means of a blister. This painful and uncertain method is now abandoned even by those who recommended it. I shall again allude to this treatment, which is better adapted to the suppurating bubo.

The glans have been incised subcutaneously. I know not the

results thus obtained. Some have gone so far as to propose the subcutaneous division of the lymphatic vessels which pass from the chancre of the glands. To this I would reply: when the glands are already infected, what advantage can possibly follow the section of the one or more of the lymphatic vessels? If infection had not taken place, then the incision might be preventive. But is this advisable for a disease which may not be developed? Again, supposing that chancre is certainly followed by bubo, can we predict what gland will be affected, or on which side it will be? Is it possible in all cases to strike upon the lymphatics of the glands which will be affected? Is it exclusively the office of the lymphatics to carry the virus to the glands?

Further, to appreciate the value of tbe abortive method in general, we must ascertain the facts relative to the dispersion of buboes. Does this often occur? Clinical observation, on the contrary, teaches that bubo once formed, in other words adenitis once established with more or less inflammation of the surrounding tissues, is very seldom observed to disappear in the rapid manner that resolution supposes. I assert that it is very rare; I do not maintain that it is impossible, for I have seen some exceptionable instances of the disappearance of the suppurating buboes, but they were immediately followed by a phlegmonous inflammation of the cellular tissue of the scrotum, an inflammation which is known to be connected with mortification of the parts. In these cases it was a kind of metastasis.

The proper treatment has reference to three varieties of buboes. 1st, the inflammatory bubo: 2d, the suppurating bubo: 3d, the chronic indolent bubo.

3d. *Antiphlogistics.*—In the treatment of inflammatory bubo, antiphlogistics are plainly indicated. In some cases they may produce resolution, and frequently limit the extent of the inflammation, as well as the purulent cavity, if the inflammation become really phlegmonous, and terminate in abscess, if, in fine, suppurating bubo succeeds to the inflammatory bubo.

As in every case of adenitis, when the patient is young and vigorous, when the inflammation has decidedly an acute character, when the premonitory symptoms and the reaction are marked by fever of an inflammatory grade, it is well to begin with a general blood-letting, and afterwards resort to the application of leeches. In the majority of cases, we rely on the local abstraction of blood. which is repeated and proportioned to the volume of the tumor, its tension, and the pain of which it is the seat. We may apply from ten to forty leeches. The largest number should be applied at first; and when the leeching is repeated, a smaller number may be used.

The mercurial ointment, not as ordinarily applied in small quantities, but in thick layers, as in the treatment of peritonitis, may produce a sedative and really antiphlogistic effect. But if we do not perceive a marked result on the first or second day, and if we find it necessary to continue the application, we are in danger of producing an annoying salivation. I therefore employ mercury

only as a topical application, and do not believe that we should aim to affect the system by these frictions. I cannot believe that when we have to treat genuine buboes, we can cure them in four or five days by means of mercurial frictions, as Swediaur maintained.

Our topical applications should be confined to rice or linseed cataplasms, or to those of semoule, and of bread. When there is much pain they may be moistened with laudanum; in other cases, we may use Goulard's extract. Rest, a diet more or less rigid, soothing drinks, gentle laxatives, complete the treatment of inflammatory bubo, of adenitis. Too often, notwithstanding these means, and especially when they have not been employed, the tumor retains its volume; it becomes more and more tense, crepitating and of a deep red color. The fever continues, the redness increases, and soon a constant throbbing pain is felt. The patient is troubled with sweats, and the formation of matter can now no longer be questioned. When fluctuation is felt, should we open the tumor or leave it to nature?

4th. *Spontaneous opening of Bubo.*—In all ages some practitioners have preferred to leave to nature the opening of the abscess and the evacuation of the pus. Swediaur, who especially taught this practice, maintained, that abscesses thus left to open spontaneously were more rapidly *consolidated*, and when cured left less deformity behind. Swediaur, however, is less absolute than is stated in books; he admits that there are cases in which the surgeon should dilate the natural opening, and in which he should even open the bubo with the knife. However it may be, Swediaur stands at the head of the advocates for a spontaneous opening, and he has ad duced the strongest arguments in favor of the expectant method of treating buboes. As to the speedy *consolidation*, that is, the cure, we may reply, that in allowing the pus to remain we favor the exposure of the gland, and its suppuration in cases where the surrounding cellular tissue alone is inflamed, by permitting the cavity to increase, and the abscess, which is never simple, to become still more complicated, and of course to retard the cure. As to the deformity I may be still more explicit; I may assert and can prove that there is a great difference between the natural and the surgical proceeding, such as I practice, be it well understood. Indeed, in the majority of cases, spontaneous opening does not occur until the skin has been detached, and become very thin; this perforation besides is but a form of mortification, and around this first loss of substance, there is more or less skin ready to mortify, and which most frequently does mortify; thence an enlargement of the first breach or rather other openings form. In the most favorable cases this skin requires a long time to become again adherent. If there be but one opening, it enlarges unequally; its thin, sharp borders, sink down towards the bottom of the abscess Should there be several openings, they often become converted into one large unequal breach, which is never completely covered by the surrounding skin, and an inodular tissue appears, an irregular cicatrix, depressed, stellated, and evidently deformed; if the openings do not become blended into one, the fistula to

which they give rise are exceedingly difficult of cure. These results are seen principally among patients who have received no care, who have worked and walked, and observed nothing like repose. The movements have then affected the diseased parts, and this, together with the chafing, has promoted the separation of the skin. It will presently be seen that the openings which I substitute for those which occur spontaneously, are not attended with such inconveniences, nor do they leave behind deformities. But, before describing my method, I must rapidly expose and judge those which have preceded it, and which are still preferred by other practitioners.

5th. Blistered surface dressed with bichloride of mercury—a method of which a wrong estimate has been formed, and which has been badly applied, especially at Paris, is that of M. Malapert. This physician proposed to open thoroughly the suppurating bubo by means of a concentrated solution of the bichloride of mercury; but he proposes to act particularly upon the cavity, so as to modify it specifically; he supposes, also, that he thus acts on the whole system. M. Malapert, therefore, proposes to fulfil a double indication, and his treatment is intended to produce both a local and general effect. M. Reynaud, of Toulon, who has most frequently and perfectly employed the method of M. Malapert, does not apply it for the purpose of opening and evacuating the bubo to more advantage than the other methods. It is only in this point of view that I judge it, for I believe that medicines to counteract a diathesis should be administered internally. The following is the proceeding:

When suppuration is first detected in the bubo, a blister of the size of from a fifty centime to a franc piece, according to the volume of the tumor, is to be applied to the point of fluctuation. The vesicle is opened, and on the denuded dermis is placed a pledget soaked in a solution of the bi-chloride of mercury, of the strength of fifteen grains to the ounce of liquid. Two hours afterwards an eschar is already formed; should it not be completely formed, the application is to be renewed, and then an emollient cataplasm. Thirty-six or forty-eight hours after the formation of the eschar, and as soon as it is detached, a purulent liquid exudes from the fissures. The discharge is more abundant in proportion as the eschar becomes detached at several points; after it has fallen off, the cavity is sometimes entirely emptied. During the discharge of the liquid, the walls of the cavity contract, and the cavity itself is soon effaced.

It is obvious that a cauterization of this kind can be rationally employed only in the case of a superficial and very limited suppuration, and even when the abscess is subcutaneous, we occasionally find it necessary to return to a second application of the caustic pledgets, which renews the pain. In employing the proceeding of M. Malapert, we must therefore wait until the suppuration has been for awhile established, for there is then more or less detachment, more or less denudation of the skin; it is likewise not uncommon to see the eschar very rapidly separated, and the open-

ing which it leaves becomes enlarged by the mortification of the integuments, which were at first only attenuated. In fine, this method is liable to the inconveniences which follow the spontaneous opening of the tumor. If the abscess be deep seated, and the pus be situated within the gland, the difficulty, and even impossibility of reaching it by a very superficial cauterization, can be appreciated. Add to this, if the pus be contained in more than one cyst, a part only can be evacuated, thence the necessity of renewing the blister and the pledget; in other words, to inflict double pain to finish the matter, if we finish it at all.

It will be seen that the supposed advantages of this method are: 1st, to empty the abscess gradually so as to permit the cavity to contract upon itself; 2d, to stimulate the interior of the cavity, and thereby promote the adhesion of its walls. The first I believe to be a real advantage; but I think that it can be more easily, more surely, and less painfully obtained by the method of puncturing which I will describe. As to the second advantage, I will say that the interior of the cavity is always sufficiently excited to produce an adhesion of its walls; when it does not take place, it should be attributed to every other cause than inertia.

6th. Instead of perforating with the caustic solution, M. Reynaud often employs small sized cauteries, which are heated to a white heat, and with which numerous punctures are made. This is not a new method; for a long time it has formed a part of the therapeutics of abscesses in general, especially of cold abscesses. Its object is to open the purulent cavity, and, at the same time, so to modify its walls as to promote their approximation and adhesion. This method is more rapid than that by blisters; it is painful, but the pain is not repeated as in the method by the caustic solution. Still, even by these little cauteries, a loss of substance is produced, by which a breach is left, which is increased by the sloughing of the surrounding skin. Thus we do not avoid the deformity or deformities which attend the cure. Moreover, M. Reynaud, of Toulon, who has extolled and much employed this method, frankly acknowledges, that after these trifling cauterizations, this separation and destruction of the skin, he has observed solutions of continuity sometimes complicated with hospital gangrene. Although it may be more easy to manage these little reeds than the solution of the bi-chloride of mercury, we can never accomplish with them what can be done with the point of a bistoury or a lancet; thus, with the actual cautery we cannot penetrate deeply, and still less obliquely.

7th. *Potash.*—*Vienna Paste.*—Other caustics, potash alone, and the Vienna Paste, are employed for the purpose of freely opening the cavity, of modifying it deeply, and for destroying a portion of the skin over the glands that has been a long time affected. It is particularly in cases of indolent buboes with a strumous complication, that these caustics have been used. Long and deep sinuses form, which fill up with difficulty, and the traces which it leaves behind are very apparent. Now a mark of this kind, in such a region, is a stigma, which may become of serious importance. It

must not be supposed that the elegant man, or the coquettish female, is the only person who has a dread of such traces, of such *souvenirs;* among the masses, and in classes apparently the most indifferent to such matters, we occasionally find individuals who are sadly mortified when compelled to carry a deformity claiming such an origin.

8th. *Incisions.—Excisions.*—In all ages, the knife has been substituted for the cautery; incisions, more or less extensive, have been performed, and portions of skin so altered as to retard cicatrization, have been excised. These extensive incisions, with or without the removal of portions, have for the most part the inconveniences attached to the cauterizations which I have described. But the knife is more easily managed than the caustic, and I prefer to extirpate a detached portion of skin, of little vitality, or a gland which presents an obstacle to the healing of the parts, than to act upon them with the Vienna paste. Besides, as with the knife we may give to the wound a certain regularity, we may expect a cicatrix less irregular, less deformed, than after cauterization.

9th. *Simple and multiplied punctures.—Proceeding of the Author.*—As may well be supposed, I do not here raise the question of priority for the purpose of deciding it in my favor. I write for the practitioner, who, perhaps, cares but little for the hand that offers him a therapeutic measure. What he chiefly wishes to know, is its efficacy, and how it is to be employed. I will only remark, therefore, that in the first edition of my work on surgery, I recommended small incisions, punctures with the lancet, and I claim only to furnish arguments in favor of this practice, and to teach it more in detail than others. I pass, then, at once to the *modus faciendi*, to the proceeding that constitutes the basis of my practice.

We commence, if possible, by shaving the tumor. As it is seldom that a bubo has not had at least one plaster applied, we should remove its effects. The instrument required for the puncture is a straight, sharp bistoury, the blade of which is not larger than a penknife; or we may use a lancet. If the suppuration be not extensive, and the abscess recent, we make but one puncture, or one incision, of a centimetre in extent, over the fluctuating point. We sometimes find that but a single gland has suppurated, and it is then emptied of the pus which it contains; the other and adjacent glands are only engorged; should they afterwards suppurate, they should be treated like the first. We may thus open, and successively puncture, as many as four glands. It is especially among scrofulous subjects that this peculiarity presents, and which must be treated by successive punctures. When suppuration exists within the gland, it is more difficult to be detected, because more deeply seated; we must then extend our incision to a greater depth in order to reach the cavity. This is another argument in favor of the knife over the caustic, as with the knife we may reach any desirable point, and the instrument may assist us in our explorations.

Should the purulent collection be of greater extent and more superficial, and the skin more or less detached, we must make several punctures at the same sitting. But instead of making them at the most fluctuating point, we must avoid the centre of the tumor, and regions where the skin is thin; instead of being direct, they should then be sub-cutaneous, so as to reach the pus by a circuitous route; it is, therefore, towards the circumference of the tumor that we should enter the knife, the point of which is directed towards the centre of the cavity. In this manner, the skin is divided where it is inherent, intact, and in possession of all its vitality. When punctured where it is thin, denuded, and possessed of but little vitality, the opening is likely to become enlarged from mortification, which is hastened by the puncture, an enlargement of the openings is thus produced, the result of which is a general communication. A large breach of continuity is now formed, to which the air has access, placing the bubo in the unfavorable circumstances of those that have been freely opened by the caustic or the knife. In making the punctures at the points indicated, if the tumor be not compressed (it should not be compressed for a few days after the operation), it is gradually emptied, and the cavity is, in a measure, filled by the contraction of its walls. The cure is then much more rapid, and it leaves no unpleasant traces behind. The cicatrices of these punctures, indeed, resemble those of leech bites; and, like the latter, they finally completely disappear. The punctures thus made, obliquely and towards the circumference of the tumor, excavate passages of which the walls sometimes contract too speedily on themselves, whereby they become obliterated before the pus is completely evacuated. But, as several openings are made, and as it is rare that all are obliterated by compressing the tumor slightly once a day, the cavity may be discharged through the openings that remain. It will be remarked, that I here advise compression which I so recently proscribed; but it will doubtless be remembered, that it was for the few days following the operation, when the pus is still abundant, and the openings perfectly free, that I recommended to abstain from compression. Sometimes all the openings have a great tendency to close speedily. I formerly tried to keep them open by means of a tent of charpie; I now prefer to let them close, after which, if any pus remain, I make one or two more punctures. Sometimes what remains becomes absorbed, and there is, of course, no necessity for repeating the punctures.

The advantages of this method are obvious; 1. It is of easy and rapid application; 2. It is less painful than the others; 3. It produces more speedy cures; 4. It leaves no deformity. I know what objections may be urged against it. It may be said that it is really advantageous only in the case of sympathetic buboes, or those which result from the extension of the inflammation, or from irritation of the genital organs, in other words, when the abscess is of a simple character; it may be urged that in the case of really syphilitic buboes it has not the same advantages, as the little openings will become inoculated and transformed into so many chancres,

which may become united and confounded into one, constituting one vast ulcerated breach of continuity. In the first place, the proof of the inoculation of these little punctures is very difficult to be found; and if I should reckon syphilitic suppurating buboes by the number of those which having been thus opened, were inoculated, I should find that there were but a small number of buboes in my service which had that nature. I have not witnessed this inoculation more than three times in a year. But I would observe, that when a bubo is established I adopt general treatment. Others will say that this goes to show that many buboes, even syphilitic, produce a pus that is not inoculable. They may explain the fact as they please. It may also be said that I do not often penetrate the substance of the gland, and that I reach the surrounding cellular tissue only, which is possible. What I maintain, for I treat the question in its practical bearings only, is, that in adopting my proceeding buboes are sooner cured and without deformity, which cannot be claimed for the other methods. I have stated that I have rarely observed the inoculation of the trifling wounds thus made; I will add, that I have seen one or two instances in which some of the wounds became invaded, the others remaining unaffected. But if all the wounds did become inoculated, thus forming one vast chancre, it would then possess the inconveniences of the other methods, of the free incisions, and cauterizations which I know are exposed to the action of virulent pus.

The students who have followed my visits, and who have been attached to my service, have been able to observe and compare the results obtained by this method with those that have followed the others, and they can appreciate its value. M. Caillant, one of my *internes*, has collected a very considerable number of cases which deserve publication.

10th. *Puncture with Injections of Iodine.*—M. J. Roux, of Toulon, and Marchal (*de Calvi*) have proposed simultaneously to inject the purulent cavity with the combination of iodine, employed in the radical treatment of hydrocele. In the first place, we empty the abscess by a puncture, and with a small syringe, introduce into the cavity the tincture of iodine diluted with equal parts of water. This mixture then takes the place of the pus, comes in contact with the walls of the cavity, stimulates and so modifies them as to promote the adhesions which should obliterate the cavity. The iodine acts also as a resolvent on the engorged glands, which is of great advantage in cases of strumous complication.

11th. *Compression.*—Compression has been proposed both as an abortive means, and consequently to be employed at the commencement of buboes, and as a resolvent means, to be used in the case of chronic indolent buboes. In speaking of the abortive treatment, I have already stated that it is impotent, and among the abortive means I include compression. But, if it be well supported and continued for a long time, if the surgeon knows how to resume its use when the tumor has a tendency to be reproduced, very good effects may be derived from compression in the case of strumous buboes, especially if, at the same time, we administer internally

medicines adapted to the nature of the case, and to the diathesis under the influence of which these tumors are developed. The preparations of iodine are here suitable, as are the mercurial, when the indolent bubo is a consecutive accident, or one of the effects of indurated chancre.

Rest is an excellent auxiliary to compression; the patient should observe it as much as possible. We may compress with the spica bandage, under which may be placed graduated compresses; or we may use a hernial truss, the pad of which should be adapted to the volume and form of the tumor. At the *Hôpital du Midi*, a little apparatus has been successfully used which was invented by a former *externe*. It is a little oval pad covered with leather. It is fixed by a strap which, being attached to the extremity of the pad, at the internal part of the inguino-crural fold, passes around the thigh, reaching on its external surface, an iron loop attached to the external surface of the pad passes through it, and having been reversed is passed around the pelvis, gaining the opposite side of the body, then arriving at the anterior wall of the abdomen it descends obliquely towards the compressive pad, and passes through a buckle on its internal side, by the aid of which the apparatus is tightened at pleasure. An apparatus is required for each side.*

[Another method of pressure has been recently recommended by Dr. J. H. Clairborne, in the *Stethoscope and Virginia Medical Gazette*. He states that in his hands it has proved incomparably superior to any other discutient. It consists in the application of Collodion, which, when applied too thickly, he has known to contract so tightly as to split the epidermis, in fissures around the borders. He recommends its application in thin layers, allowing one layer to dry before another is made. The above account we gather from the *Nashville Journal of Medicine and Surgery* for June 1853, p. 351.—G. C. B.]

12th. *Various Combined Methods.*—It is rare that in the treatment of bubo, especially its chronic form, different means are not resorted to, and that these means are not alternated, and in a certain manner combined. Thus, in the treatment of bubo, which M. Ricord regards as the *necessary accompaniment* of the indurated chancre, local mercurial frictions, the plaster *de Vigo*, and general treatment, should go hand in hand. According to the same practitioner, a combination very often efficacious in the treatment of non-specific indolent bubo consists in the employment of blisters, mercurial ointment and cataplasms, as long as we obtain an amelioration; but if it remain in *statu quo*, the blister is allowed to dry in order that we may resort to compression, which in turn is continued whilst it produces a diminution, and is abandoned if it produce no effect for the blister; and thus in succession these means are employed until a complete cure is obtained.† I have been desirous of noticing this combined treatment as it was proposed by M. Ricord himself. The

* Ricord, *Traité pratique des maladies vénériennes*, p. 588.
† Ricord, *Traité*, &c., p. 588.

obscurity of the formula will perhaps be noted at once as well as the difficulty of its execution.

In conclusion, I still advise the general treatment adapted to the nature of the tumor; this is the best of all resolvants.

CHAPTER VII.

VEGETATIONS.

These are parasitic growths appearing on different parts of the integuments, and which resemble certain vegetables.

Situation.—In the male, they are observed most frequently on the mucous membrane, covering the glans and lining the prepuce; in the female, at the entrance of the vagina; we may find them, and not unfrequently, in the vagina itself; I have seen them on the neck of the uterus and surrounding the nipple. In both sexes they occur in the vicinity of the anus, in the urethra, especially at the entrance of the canal; they are met with also in the genito-crural fold, at the umbilicus, on the lips, mouth, and base of the tongue. I once saw them on the mucous palpebral lining, in a subject that had suffered from blennorrhagic ophthalmia.

Varieties.—All seem to penetrate the dermis, and to be more or less expanded. Their mode of insertion and expansion, their pedicle, and color, present differences which have caused them to be compared with warts, cauliflowers, leeks, strawberries, and raspberries. Some are sessile, having no pedicle—they are small, and their surface is fissured: these are the paler vegetations called *warts*. When there is a kind of stem, of one or more lines in length, with a swelling of a deeper color, in the shape of a furrowed head, it is called the *leek*. If the stem give rise to many branches, which shoot off so as to form several united *bouquets*, then we have the *cauliflower* excrescence. There are other vegetations with protuberances strongly marked, of which the shoots are less distinct, the prominences less decided; they are quite red; they have been denominated strawberry excrescences or raspberry excrescences, according to the depth of their colors. (*Vid.* plate 4, fig. 1.) The form of the vegetations occasionally depends upon the seat which they occupy: thus, in a prepuce somewhat narrow, they are pressed between this envelope and the glans, and assume more or less the form of the crest of the cock (fig. 1, plate 4); the same sometimes occurs when they are seated between the nates.

Structure.—All of these vegetations are more or less vascular, and especially the last-named varieties. By prolonged maceration all that part above the level of the skin becomes discolored and reduced to a whitish pulp, without any regular organization, and resembling coagulated albumen; it is easily removed by scraping. Thrown on hot coals, this matter desiccates, hardens, turns yellow, and emits an odor like that of burning horn, or other productions

of the epidermis. In fact, M. Sibert has discovered, by means of the microscope, that these vegetations contain only cells of the epidermis and a vascular element.* The point at which they are inserted into the integuments appears to be somewhat thicker than in the normal state; it is redder, and traversed by numerous vessels, some of which penetrate the vegetation. The dermis seems also to be a little thickened. The epidermis is not perforated, but rises with and covers the vegetation. Sometimes the vegetation is but a disease of the mucous or cutaneous follicle, preceded by a little black spot on the skin; the secretion of the follicle becomes more and more concrete, the follicle itself suffers a kind of extroversion, and presents a granulated base, on which are seated rough projections in the form of a leek.

Symptoms.—Frequently the appearance of the vegetations is not preceded by any modification of sensibility. The patient sometimes experiences a slight pruritus at the point where the vegetation is about to shoot forth; this pruritis increases, and there is a sensation of pain until the production appears. Once developed, it is often indolent or only painful when chafed. At other times, it is painful even without the application of any irritating cause. There are cases in which it may be said that there is no pain in the vegetation, but the latter may be the exciting cause of it: for example, when numerous and voluminous vegetations are enclosed within a narrow prepuce, they are a source of irritation, and inflame the lining membrane of the glans, as well as of its envelope; they distend, and stretch the latter so as to produce severe pains, which cease on the division of the prepuce to a sufficient extent to expose the morbid mass. In these cases, especially after they become exposed to the air, they assume the color of the raspberry. A discharge is now secreted of a very disagreeable odor. The vegetations themselves may be the seat of a congestion bordering on inflammation. Sometimes they slough, and this is one method of cure. But as this mortification is but partial, the cure is not complete; *roots* always remain, from which the vegetations may be reproduced.

Complications.—Accidents.—The venereal accidents which I have regarded as the starting point, the cause of the vegetations, may also exist as complications; thus, chancres more or less advanced, a blennorrhagic inflammation, mucous tubercles, according to their seat and volume. Vegetations may themselves give rise to accidents, and interfere with important functions; as of the urethra, the vagina and the penis.

The possibility of a cancerous transformation of the vegetation is generally admitted. I am inclined to believe that those which have been regarded as cancerous transformations, were primarily of that character; in other words, that the venereal vegetation did not exist.

Diagnosis.—This is easy when observed on their first appearance, and when their development has been watched. But, under the opposite circumstance, it is more difficult. The vegetations

* *Physiologie pathologique*, t. i., p. 23.

on the glans and prepuce furnish the most frequent examples of difficult diagnosis. Thus a vegetation incarcerated within a narrow prepuce in a state of phimosis, may be very difficult of detection. It may be regarded as an indurated chancre, a calcareous concretion, or a deposit of sebaceous matter, according to its volume, consistence, and insensibility. At a clinical trial of the *concours* of the central *bureau*, a patient was submitted for examination who had a congenital phimosis. This patient, already advanced in years, for a long time had had a tumor within the prepuce. By pressing through the skin, this tumor was insensible and very hard; the introduction of a probe produced no pain, and gave exit to not the slightest particle of blood. The majority of the jurors remained doubtful of the nature of the tumor, and in this uncertainty the candidate participated. An incision of the prepuce, afterwards made, revealed the existence of a very old vegetation which possessed but little vascularity. Lately there was in my service a young man who had within his prepuce a very decided induration, clearly representing a vegetation; the appearance of an eruption (*roseola*) disclosed the fact of the existence of a chancre, with a very indurated base.

But the cases most obscure, and those in which the diagnosis is really of great importance, are those of old degenerated vegetations, which invade and cover the glans, and which present a cancerous aspect. The morbid masses, in these cases, exhibit softening at certain points, and at others indurations; some become mortified; hence, they have a grayish aspect, an unequal consistence, and are the seat of a sanious fetid discharge. If to this condition, we add the emaciation of the subject, the pallid countenance, the effects of a prolonged suppuration, and it must be admitted, sometimes of treatment, it will be perceived how easily these vegetations may be confounded with cancer of the penis, and we need not be astonished that such errors have been committed; the mistake may be so complete, as to induce the practitioner to amputate the penis. This error, sometimes, is not removed even after amputation and dissection of the parts. The cause of this is the atrophy of the glans caused by the compression of the vegetating mass; this is occasionally so great that the glans seems to have disappeared. But when the diagnosis has been clearly established, when the vegetations alone have been removed, the glans gradually recovers its form, and almost its ordinary volume. The diagnosis, I repeat, is here very obscure, and we are deceived in a double sense Indeed, in certain cases, true vegetations have been mistaken for cancer, and *vice versâ*. The first mistake was committed in my service, by one of my former internes, who has written on venereal diseases, and the other by surgeons who quickly decided to sacrifice the organ. Besides their microscopic characters, vegetations are to be distinguished from cancer, after their removal, by their great vascularity, which causes them in a short time after separation to diminish one half in size. During life, the diagnosis is much more difficult, especially if the early development has not been seen. If observed at the onset, it will be

found that cancer does not at first appear as a pimple, but as an ulcer; and it is surrounded by more or less induration. Vegetations seldom exist alone; they first appear by several *shoots*, and the surrounding tissues are soft, except when they spring up on the induration around a chancre. Age, also, should be taken into consideration. Thus when the subject is young, there is greater probability that induration may exist. We should also have a regard to glandular engorgements; thus, in the vegetations which do not succeed to a chancre nor to a blennorrhagia, there is no glandular enlargement. When cancer of the penis exists in its early stages, there is almost always a very hard and indolent enlarged gland, before it undergoes the process of softening. But here, as in all other cases, this circumstance should be noted, without attaching to it too great importance. Glandular enlargements are among the most common causes of mistakes in diagnosis.

Causes.—Blennorrhagia, balano-posthitis, and chancre, are the principal causes of vegetations; thus they may shoot forth at a point of the integuments only, that has been inflamed, excoriated or ulcerated; in fine, vegetations may be the first as well as the last symptoms of contagion. We see vegetations succeeding immediately to posthitis, we know that they may shoot forth on the cicatrix of a chancre, and they may appear on the glans without inflammation or previous ulceration; the same may occur at the anus. As a consecutive accident, they may occur at any period of syphilitic infection. I have now in my service, three patients with vegetations around the anus; one of them is young, and has acknowledged unnatural connexion; the second, for three months has had a chancre on the penis; and the third has also had a chancre on the same organ; but for five years his system has been fully infected, and the vegetations have been the last to appear. Vegetations may, therefore, belong both to the primary, and the consecutive accidents.

Nature.—It has been maintained that they are not of venereal origin. According to some writers on syphilis, they are but parasitic growths generated under the influence of the irritation excited by a blennorrhagia or chancre, or produced by some other irritating cause, as for example, the irritating discharges secreted by the genital organs of the pregnant female. I deny that any irritating cause may give rise to them; there are cases, indeed, in which they shoot forth, without any previous irritation. We never find a vegetation appearing without an antecedent, without venereal accidents, without some preceding intimate connection. Thus irritation of the glans and the prepuce without sexual intercourse is not uncommon in very young boys; vulvar inflammations are often observed in young virgin girls; yet we never find vegetations occurring at this age, nor after this kind of inflammation. But if the subject has had connection, the case is different; then, vegetations may shoot forth from the slightest irritation. Again, the syphilitic nature of the vegetations is incontestable, when they appear as consecutive accidents, long after the chancre that preceded them. There is another argument against the doc-

trine that these vegetations are the result of simple irritation; and that is, their very decided tendency to reproduction.

Transmissibility.—This is now placed beyond doubt, by the observations of the majority of writers on syphilis, and especially of MM. Baumés and Reynard (of Toulon). The latter thus remarks: "Incontestable facts prove that the form of syphilis which I am now considering (vegetation), without being so uniformly contageous as chancres, are capable of being directly transmitted."* I am at present treating a young girl who had connection for the first time with a man affected with vegetations on the corona glandis; she has vegetations on the vulva, and these have been preceded by no other symptoms. I should remark, that the vegetations on the young man grew on the cicatrix of an indurated chancre, but the chancre had been completely cured for two years.

Treatment.—This is both general and local. Those who pretend that vegetations are not caused by the syphilitic virus reject the general treatment, and proscribe mercury. Those, on the contrary, who believe in the specific character of these morbid growths, recommend a general treatment. The remedies indicated may be inferred from the circumstances in which they are developed. I have shown that they may appear in all stages of syphilis, and that they may be the first apparent symptom of infection. Now when they appear during the existence of a diathesis, they are rarely alone, but are accompanied by other accidents requiring a general treatment; hence all doubts of the propriety of the latter are removed. Sometimes, they appear after all the other accidents, and then general treatment has in most cases already been adopted, and this has consisted either of the preparations of mercury or of iodine. Constitutional remedies may now produce no effect: the vegetations have become localized, they no longer have deep roots, but are a kind of remnant of the disease. Topical treatment, trifling surgical operations, should now be preferred; for if entirely extirpated, they do not return, as is so often observed under other circumstances.

When vegetations are primary, when they constitute the first apparent symptom of the infection, we should still pursue a general treatment, if we would not expose the patient to the liability of frequent returns, and if we desire to prevent complications. Moreover, facts go to show the efficacy of a general treatment; a remarkable instance may be found in the work already mentioned of M. Reynard (of Toulon).† Under the influence of the concentrated syrup of sarsaparilla, with the addition of the corrosive sublimate and the extract of opium, in fifteen days well-marked vegetations will become softened within, and drop off, no more to return. I shall never forget the case of a young girl I found in the ward of *St. Louis* when I entered on service at the *Lourcine*. Both the *labia majora* and the *labia minora* were covered with small vegetations which produced an intolerable pruritus, and even severe

* *Traite pratique des maladies vénériennes*, p. 310.
† P. 312.

pain. All kinds of powder and ointments had been employed; some of the vegetations had been removed with the knife, but had reappeared, whilst the others remained. No general treatment had been undertaken; mercury had not been administered, perhaps because the young patient was feeble and of a lymphatic temperament. I thought best, however, to prescribe Dupuytren's pills, and in less than twenty days the vegetations began to wither, and by degrees they fell off spontaneously. I have observed other cases of the kind, but truth compels me to admit that vegetations most frequently remain in spite of general treatment. We must therefore resort to topical treatment, to the ligature, and to excision.

There are numerous topical applications which have been greatly multiplied on account of nervous patients who dread anything like an operation. Saturated solutions of opium, crude opium, iodide of iron, sulphate of copper, and calomel, have all been used. The most successful method is the following:

℞. Savine, ʒ i.
Alum, Calc, ʒ i.

Reduce to a very fine powder. Wash the vegetations twice a day with red wine; cover them afterwards with a thick layer of the powder. In the course of three or four days the vegetations become feeble, and the patient may begin to remove them with his finger nails. After each separation, there is a slight bloody discharge, which may be arrested by the vinous lotion, after which the powder is reapplied.

When the vegetations are not very numerous, and have not a large base, this method is successful, and the patients are delighted to operate on themselves, and to cheat as it were the hands and knives of the surgeon.

Some practitioners prefer cauterization; for this purpose, the nitric and the hydrochloric acids, the nitrate of silver, and the butter of antimony, have been employed. That most used at the present day, and which is the most efficacious, is the nitrate acid of mercury. A vegetable, silk, or silver ligature has also been used, but this method, tedious in its effects, equally painful with cauterization or excision, is now generally abandoned by surgeons. Some patients still submit to it; they gradually tighten the knot, and as they themselves operate, and can suspend its action when they please, they actually suffer more than they would under the hands of another. But topical applications cannot reach the root of the vegetations; if with ligature or caustic, we act to such a depth, we should produce most violent pain, and of longer duration than that resulting from excision. A cutting instrument should therefore be preferred when we have reason to suspect that the roots of the vegetations are not very deep, when their base is large, and when, in fine, we would prevent a return. A forceps may be used to seize the vegetation, and it may be excised with flat curved scissors. When it is somewhat large, but little prominent, as we often find on the genital organs of the female, it is sometimes difficult to seize it, it glides

between the blades. I use small forceps (*a dents de rat*), which will embrace the quantity and only the quantity of the mucous membrane required to be removed around the vegetation, and this is extirpated without being torn. My rat-toothed forceps are much employed by oculists in their operations on the eye-lids and the eye. Some surgeons cauterize the wound left by the operation; but it is unnecessary if the limits of the skin have been surpassed; if they have not been passed, then the extirpation has not been well performed; if we resort to caustic, then we inflict two operations. It is better to seize the whole thickness of the integuments, and not be too saving of the parts removed. Especially should this rule be followed, if the integuments be more or less altered and thickened, either by the venereal affection on which the vegetation has sprouted, or by its age, which by long irritation of the skin, has developed on its tissue a hypertrophic action.

After the operation, blood often flows in great abundance, especially when the excrescence is seated on the glans. Cold applications should be applied at first, and the parts should afterwards be dressed as in the case of a simple wound. It should be well understood that extirpation is not to be attempted, if there exist chancres which have not healed, for the wound may then be inoculated. As a general rule, we should not operate until all complications are removed. However, there is often around the vegetations an irritation, an inflammation even, that subsides only when these excrescences have been removed.

CHAPTER VIII.

MUCOUS TUBERCLES.

These are also called, according to their aspect and form, *flat pustules*, *flat tubercles*, *mucous pustules*, *mucous patches* or *papules*, [and condylomata.—G. C. B.] They consist of elevations of which we may have a very correct idea if we imagine the application of disks more or less perfect, or portions of a disk, to the integuments.

Situation.—These tubercles form on the mucous membranes and portions of skin which, either naturally or from disease, resemble mucous membrane: thus, the skin on the genital organs, on the parts adjacent, and at the bend of the thigh. In the female, they are more frequently observed on the vulva; whilst in the male, they are found at the margin of the anus. The scrotum, penis, perineum, are also frequently affected. They have been observed at the genito-crural fold, at the umbilicus, in the external auditory canal, and behind the pavilion of the ear, in the axilla, the mouth, the commissures of the lips, on the tongue, the internal surface of the cheeks, on the tonsils, and the walls of the palate, at the entrance of the nostrils, the alæ of the nose, the base of the toes, around the nails, the nipples, and the neck of the uterus. These

tubercles may occupy nearly all of these regions, on the same subject, and assume all the forms which I shall soon describe. At present (March 16th, 1852,) there is in my service a man forty years of age, who has tubercles on his ears, nose, lips, tongue, right axilla, at the genito-crural fold, on the scrotum, perineum, anus, and between his toes.

Causes.—Mucous tubercles are more frequently observed in females, owing perhaps to the extent of the mucous membrane lining their genital organs, and the delicacy of their skin; children and lymphatic subjects are also strongly predisposed. Want of cleanliness is favorable to their development: indeed, a female seldom comes to the *Lourcine* from the country, in whom mucous tubercles do not exist. Corpulent persons, whose acrid perspiration accumulates in the genital fold, the irritation produced around the margin of the anus by prolonged walking, and especially by constipation, are among the causes which favor the development of those venereal accidents. The surface of the integument frequently exposed to the action of the matter discharged in blennorrhagia, is sometimes covered with mucous tubercles. It is admitted, that chancre may be transformed into a mucous tubercle, and this too at the moment when a chancre is healing, but healing irregularly; in such a case, the tubercle is only a transformation of the chancre. The truth is, that a tubercle may appear even at the point where a chancre is seated, as it may appear on a surface simply inflamed; such sometimes being the result of a balanoposthitis. It may therefore be regarded as a consecutive accident, but it may, likewise, be altogether primary; in other words, it may be the first accident observed to follow a suspicious connection.

In females, the mucous tubercle most frequently exists as a primary symptom; in the male, on the contrary, it is generally found to follow a chancre on the penis and urethral blennorrhagia, whilst it is itself followed, some time afterwards, by the same disease at the anus. This, moreover, is one of the accidents which most compromises the classification of diseases, the syphilitic accidents, into primary and secondary, if we attach to this classification a doctrinal and absolute sense.

Symptoms.—The mucous tubercle may appear one or two weeks after coïtus, and often during the existence of chancres, or of blennorrhagia. Sometimes there is a period of incubation of two or three months, and even longer. Occasionally they appear at once (*d'emblée*); they then constitute the first symptom of the pox.

They resemble disks, or portions of a disk, glued on the surface of the integuments. Sometimes they have an oval form. The smallest are simple papules which increase to the size of a lentil; the largest, the true clusters, seldom exceed the size of an American dime (fifty centime piece). When several pustules come together and become confounded into one, they may be of very large size.

Instead of remaining in the state of patches adhering by one entire surface, these excrescences, especially when of long standing,

Fig. 1.

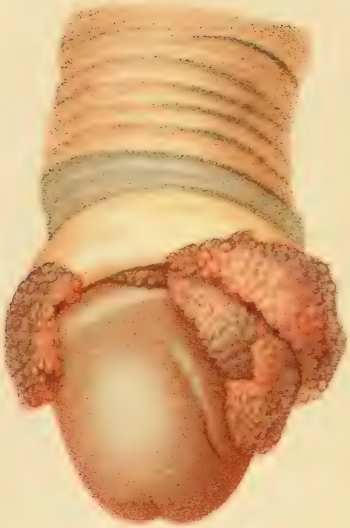


Fig. 2

Fig. 1. Vegetations. Fig. 2. Mucous pustules around the

become now and then detached and pediculated, assuming the form of the vegetations in condyloma. Thus, in the patient to which I have alluded, who was almost covered with tubercles, those in the axilla and the genito-crural fold strongly resembled the vegetations of which I have spoken.

When seated on the mucous membranes, the color is more or less of a lively red, whilst on the skin, in the majority of cases, they are brown. Around them the coppery areola of the syphilitic eruptions is often observed. The surface is sometimes smooth, slightly fungous, and sometimes presents a macerated appearance. Occasionally they are completely fungous, and of a violet color. In persons of a brownish color, even when they grow on the skin, they are fissured, and appear as if irritated. They may have an eroded and even ulcerated surface, resembling that of chancre, especially that form known as the *ulcus elevatum*.

They generally secrete a serous like, or sero-purulent fluid, which has a peculiar and repulsive odor. The pus becomes more strongly marked as the ulceration is established and the pustules are irritated.

Seldom do the mucous tubercles exist alone, especially about the anus and the vulva. They may be extremely numerous, and as I have already stated, occupy several regions; generally they occur in groups, or are arranged in order, on a line more or less curved: thus, they will appear on the edge of one of the labia, or on one side of the nates. Then, in the majority of cases, if the person be careless, we observe on one of the labia or nates, tubercles precisely like those on the opposite side. It is not uncommon to find two, one of which seems moulded on the other, to such a degree as to resemble the valves of a shell. This resemblance of two tubercles, situated on organs adjacent to each other, is another argument in favor of the contagion of this form of syphilis. (Vid. Plate IV. Fig. 2.)

In this symptomatology I have particularly dwelt on the characters of those most known, viz. those on the genital organs and around the anus. There are others less known, either from their infrequency, or because they are so situated as never to lead to the suspicion of their existence, or, in fine, because their characters are less marked, and probably, also, because, up to the present time they have not been described. I proceed to point out the appearances by which they may be known, which will complete the general sketch and facilitate their diagnosis.

In the nasal region they may be found either without or within the nostrils, and at first resemble those at the angles of the lips; they are seated in the groove that separates the cheek from the ala of the nose. They are of smaller size than those on the lips, being occasionally not larger than the head of a pin. Sometimes we find in the groove above mentioned an elongated scale, which is very thin, ulcerated, and transformed into a fissure. After this has healed, there remains a dark red shade, which cannot deceive the observing physician, and which may become a precious sign in forming a diagnosis. Within the nostrils, or at their entrance, these

layers are less frequently observed; they generally form a swelling with crusts, the fall of which exposes a red and gray surface, then the crusts are renewed until a cure is completed. The cure is retarded by the excoriations produced by the patient in his efforts to relieve the itching.

On the toes and around the root of the nails, the tubercle has nearly the same characters. Almost always the patches are ulcerated and resemble rhagades of the anus. The most prominent portion is of a bluish color and round between the toes. They are elongated at the root of the nails and follow the direction of their base. The ulceration differs in the two cases. Around the nails, they are irregular fissures, with edges more or less turned over on the nails. These layers are painful and emit the most fetid odor, when the patient does not observe cleanliness. They are very speedily affected, and are quickly cured.

In the aural region, it occurs at the junction of the concha with the mastoid region, around the auditory canal, and assume the form of the swelling which we find at the entrance of the nostrils. It may also be found even in the auditory canal.

On the neck of the uterus, it is often of a reddish gray color, very round, distinct, and a little larger than a lintel. It has been seen, at the same time, on both the upper and lower lip.

At the umbilicus, the patch occupies in part or entirely the umbilical depression; it is ordinarily prominent, of a reddish-gray color, humid, and of a sickening odor. Sometimes there is pruritus, but rarely pain.

Around the nipple we sometimes find an excavation, lined by a layer which somewhat overlaps it; it has a grayish aspect, is humid, smooth, and there is an oozing of muco-purulent matter.

In the buccal region, the mucous tubercle is constantly seated on the external border of the lips, at the commissures, and on the internal surface of the cheeks; on the edges of the lips are little projections, generally, of an elliptical form, varying in number and covered with crusts. They frequently exist undetected, and often disappear but readily return. These patches almost always coexist with a similar condition of the throat and the genital organs.

At the labial commissures it is of a granulated aspect; there are at least two of nearly equal size, one on the superior, one on the inferior lip; one fissure separates them, a fissure that remains after the removal of the patches. These are likewise very often undiscovered. We see nothing but the fissure which is regarded as being independent of syphilis.

On the tongue, we find patches on the apex, the base and borders. They are very large, of an elliptical form, and sometimes ulcerate. In the female these patches almost always coincide with a similar affection of the vulva.

On the velum palati and tonsils, mucous tubercles are of frequent occurrence, especially on the latter. They often escape detection at their origin, for then they are not prominent; they are round, multiple, sometimes confluent, and almost always of a grayish-white color. Occasionally they ulcerate at the centre, or at other

points of their surface. The tonsils are often enlarged and of a red color, which spreads to the surrounding parts. With the patches in this region there exists symptoms of angina, pain in the throat, exasperated by deglutition, catarrh, and a little coryza.

In *the axilla*, where pustules are rare, they are sometimes seen prominent and a little pediculated.*

Diagnosis.—The description which I have given constitutes a true diagnosis. The *ulcus elevatum* alone can be confounded with the tubercle in question. But this form of chancre generally appears on the edge of the prepuce, where tubercles are *not* common, and it is preceded by a true ulceration; besides, it requires a much longer time for its cure.

[There is one point connected with the diagnosis of the mucous tubercle to which for a moment we solicit the reader's attention. Waller, who is at the head of a large venereal hospital at Prague, has reported, among other cases, that of a nurse named Watzka, who became affected by suckling a syphilitic child. In describing the mucous tubercles which formed on this nurse's breast, he states that the one on the right breast was of the size of a bean; that on the left of a pea, and that they rested on a broad base. M. Ricord would impeach the accuracy of Waller's diagnosis, on the ground that they rested on a broad base, and asserts (Letter xxix., p. 221) he knows not what may be regarded as mucous tubercles at Prague; but at Paris, those described by M. Waller would be considered as very excellent specimens of indurated chancre with a broad base! The nurse's nipples became affected from mucous tubercles on the child's lips. Now let us examine a few *French* authorities upon the subject of this broad base of mucous tubercles.

In the *Bibliotheque du Medicin Praticien*, vol. vii., p. 260, it is stated that "mucous tubercles vary in breadth from the simple papule, the size of a lentil, to a tubercle as large as a half dime or dime piece. Again, at page 261, quoting from MM. Baumés and Reynaud, we find that their volume varies from that of a small lentil to a dime piece."

M. Rayer (Lond. Ed. by Dr. Willis, p. 812) observes, "that these tubercles attain a size but little less than that of a shilling" (English). At p. 813 he remarks, that when situated on the breast they sometimes ulcerate to a greater extent than they are ever observed to do in any other part of the body."

M. Cazenave (Bulkley's 2d. Ed. from Transl. by Dr. Burgess, pp. 303, 304) states that "these tubercles are occasionally as small as lentils, at other times thick, of a deep livid red color, *and as large at the base as a shilling*" (English).

M. Simon (Gustav.) in his work "On the Diseases of the Skin, as elucidated by Anatomical Investigation," Berlin, 1848, (*Med. Chir. Review*, April, 1849, p. 357,) says, "the diameter of the broad condylomata (mucous tubercles) varies from that of a lentil to that

* Vide, a memoir of MM. Deville and Davasse in the *Archives generales de medécine.*

of a *groschen* (in *size* equal to the American quarter eagle, or $2.50 gold piece).

M. Ricord's contempt of the diagnosis made by M. Waller in the above case, arises solely from the fact of his (M. Ricord's) opposition to the doctrine of the transmissibility of secondary accidents, and all who do not join in his faith must suffer from his unsparing sarcasm and ridicule.—G. C. B.]

Contagion.—Inoculation.—The contagious character of the mucous tubercle; in other words, its transmissibility from one individual to another by intimate contact, is generally admitted, since it is almost universally acknowledged that it may be a primary accident. M. Ricord is, with but few exceptions, the only writer on syphilis that denies its contagious nature. Nevertheless we find certain doubts expressed in his work, certain contradictions which would place him among the contagionists. However this may be, those practitioners who have the opportunity of seeing both together, know what credit to attach to the contagiousness of these pustules. They will see on the left side of the scrotum a flat tubercle resembling that on the right side of the vulva with which the man had had frequent connections. I retained for a long time in my service a patient affected with the mucous tubercles at the margin of the anus, of which I have had a sketch taken; those on the right nates seem moulded on those of the opposite side, as represented in plate 4, fig. 2. The following is a report of the case made by Mr. Pellagot, one of my *internes*. This case shows not only the remarkable relation existing between the tubercles on both sides of the anus, but it is an excellent example of the multiplicity of the syphilida on the same subject.

G. (Alain,) æt. 25, currier by trade, of bilious temperament, and good constitution. Admitted 3d Nov. 1851, into Ward 9, bed No. 7.

1845. Blennorrhagia, which lasted six months. Treated by copaiba.

1849, (Sept.) Blennorrhagia and chancre on the prepuce. The former lasted two months, and was treated by cubebs. The chancre was cauterized by the nitrate of silver. At the end of about fifteen days it was cicatrized. No other treatment.

1850, (October.) Blennorrhagia, chancre on the glans, suppurating bubo in the right groin. The patient was treated at the hospital at Nantes. For a month he took a fluid which he believed to be a solution of iodine.

1851, (August.) A warty excrescence was developed on the skin of the penis, at the very place where a chancre had previously existed. Two others, smaller than the first, grew on the edge of the prepuce. They appeared four or five days after the last coïtus.

Eight or ten days after the appearance of these vegetations he had a urethral blennorrhagia. The patient is positive that there was no abrasion on the glans; for fifteen days he has observed absolute continence.

Six weeks after the vegetations, three weeks after the urethritis,

mucous tubercles appeared on the scrotum and at the anus. Balanitis, followed by phimosis. At the same time an exanthematous syphilitic eruption. Finally, twelve days since, there was a lichenoid eruption and alopecia. On the 3d Sept., at the time of his admission, in addition to the vegetations on the prepuce, the urethral and balanitic discharge, the patient still presented various kinds of eruptions. On the lower extremities, and the arm, copper-colored spots without elevation, having had at first a rosy color for the extent of a franc piece. These spots are particularly remarkable on the legs, where they are more numerous and larger than elsewhere. On the chest and the forehead lichenoid eruptions; on the neck squamæ of psoriasis, and on the whole side crusts of the pustules of ecthyma.

Finally, on the scrotum, and at the anus, mucous tubercles abound. At the anus, especially, these excrescences assume a remarkable disposition. There is indeed the closest resemblance between the tubercles on the right and those on the left side. The patient declares that their appearance was not simultaneous, but that there was some days interval. On the 5th he was placed under the influence of pills of the proto-iodide of mercury, and in three months the patient left, cured. (Vide Fig. 2, Plate 4).

For a long time experiment has corroborated the results of observation, and Wallace repeatedly inoculated the mucous tubercle from a diseased to a sound subject with success. And yet, notwithstanding our frequent and easy communication with Dublin, attempts have been made in France to conceal the results obtained in that city! Wallace denuded the skin, by a blister or otherwise, and applied to the denuded surface portions of the mucous tubercle, or charpie impregnated with the matter secreted; he thus produced, almost at pleasure, tubercles which varied in form, but which belonged to the class of accidents called *secondary*.

M. Bouley, a hospital physician, whose attention was aroused by my experiments in inoculating syphilitic ecthyma, undertook with M. Schneph some bibliographical researches and experiments, which form a part of an elaborate memoir published in the *Annales des maladies de la peau et de la syphilis*, (vol. iv., Oct. and Nov., 1851.) This memoir contains the report of numerous cases, copied from the work of Wallace; they leave no doubt whatever of the transmissibility of the mucous and of other tubercles belonging to the class of accidents called *secondary*. The memoir is invaluable, particularly on account of a case reported under the supervision of M. Bouley, by M. Schneph, *interne* at the *Lourcine*. This case, which cannot be too frequently studied, itself resolves two questions of the highest importance, for it proves: 1st, that the mucous tubercle may be inoculated; 2d, that a subject that has been completely infected with syphilis, and passed through all the different stages of the disease, may have a second attack. The following is a synopsis of the report:

Patient, a female, at the *Lourcine* (service of M. Bouley). Had suffered from constitutional syphilis, as was manifested by disease of the fibrous and osseous systems; she had gummy tumors and

necrosis. A blister was applied to the arm, and, after the removal of the epidermis, for three days it was dressed with charpie impregnated with the secretion of mucous tubercles on another patient in the same hospital. On the fifth day after the inoculation, the blistered surface had healed; but on the seventeenth day, lenticular pimples, of a copper color, covered the blistered part; on the twenty-seventh, crusts appeared, and the eruption was pronounced ecthyma by M. Cullerier, which by M. Cazenave was regarded as syphilitic. A second blister, dressed simply, and not inoculated, promptly dried, and was followed by no eruption.

There was here, therefore, as in other cases of inoculation that I have known, a long incubation. It lasted seventeen days. A constitutional syphilitic accident afterwards appeared, but in a form less profound than the patient had already experienced; since the accident inoculated was a syphilitic eruption, a cutaneous affection, whilst the others involved the fibrous and osseous systems. Further, forty-eight hours after inoculation, there followed a syphilitic fever, connected with the new infection. There was intense cephalalgia, the crusts of the ecthyma remained, and there was an appearance of tumors in the subcutaneous cellular tissue, together with a kind of imperfectly-defined nodes, like those on the female from whom the matter was taken for inoculation. This new syphilitic excitement was advantageously modified by mercury, although it had resisted the iodide of potassium.

Thus, I repeat, this case at once destroys two dogmas:—1st, that of the non-transmissibility of syphilis in its secondary form; 2d, that which proclaims that syphilis cannot affect an individual but once during life.

Waller, physician to the hospital at Prague, has inoculated by another proceeding: instead of removing the skin by a blister, he scarified the parts. The subject inoculated was a young lad who had never suffered the slightest venereal symptom. The matter of inoculation was taken from a subject affected with mucous tubercles. Charpie was impregnated with the secretion of these pustules, and applied to the little wounds already made on the thigh of the young lad. The whole was secured by dressing, *par occlusion*, that prevented the contact of any other substance than the charpie saturated with the morbid secretion. There was at first a little inflammation, or, to speak more properly, some redness, which disappeared at the end of four days; finally, it was not until the twenty-eighth day from the inoculation, that tubercles and papules appeared at the place of inoculation, and symptoms of general infection.

There were, in this case, at first, inflammatory phenomena, which were soon extinguished, an eruption which aborted, and, some time afterwards, the effects of the virus were produced in the most incontestable manner. We may often meet with analogous cases; the eruption which first appears may abort, and after this the true syphilitic eruption is observed to follow.

[There is abundant proof, as we have already shown, that inoculation with the matter of chancre does not always produce the

same invariable result, the so-called characteristic pustule; and such, as might be expected, is the case with that of secondary accidents—as, for example, the mucous tubercle. We have mentioned the fact that Dr. Skae, of Edinburgh, in four out of thirty-six inoculations of the matter from mucous tubercles, produced positive results, but, "in the only cases in which my inoculations succeeded, the effect took place within one or two days," (Cormack's *Lond. and Ed. Month. Journal*, July, 1844, p. 620.) "In all of these, the first appearance presented in the seat of the inoculation was a pustule on the second or third day, as in inoculating from a chancre. At length a scab formed, which appeared to be seated on sores depressed below the level of the adjoining surface, but without the elevated or hardened edges, or the defined circular form of chancre. These continued to increase in size, preserving the same appearance and covering, until they met each other and coalesced. On the 14th day, these crusts became detached, and a fungoid excrescence, having all the appearance of a condyloma, shot up from the sore." We quote from the abridged account of Dr. Skae's article, which originally appeared in the *Northern Journal of Medicine* for April, 1844.—G. C. B.]

Whoever peruses the remarkable work of Waller,* may see with what rigorous precision he has selected the elements of certainty, when, from his own clinical observations, he remarks: "Strongly as the above cases show the great probability of the contagious nature of secondary syphilis, I could not and would not rely on them alone; I sought, certainty, and believed that it could be found only in inoculation. The following is the principal instance of inoculation:

"Durst, æt. 12, No. 1396, for several years was affected with *tinea favosa*, of the head, a disease for which he had been several times treated in the institution; his health is perfectly good, and he never had an eruption of any kind, nor was he ever troubled with scrofulous affections. As his disease compelled him to remain for several months in the building, and as he had never had syphilis, he was considered a proper subject for inoculation: which was performed on the 6th August, 1850. A scarificator, perfectly clean, was applied to the anterior surface of the right thigh, and into the wounds thus made, still fresh and bleeding, pus from mucous tubercles was inserted. For this purpose, a narrow wooden spatula was employed, together with charpie saturated with pus, which was gently rubbed on the surface of the wounds, and which was afterwards there deposited and secured. The matter for inoculation was taken from a woman (named Némée), who, indeed, presented the cicatrix of a chancre, but who, at the time, had no primary sore. On the labia majora and minora there were mucous pustules, covered with an exudation partly croupy, partly purulent. These croupy exudations, besides, existed throughout

* *De caractére contagieux de la syphilis secondaire*, by Dr. Waller, translated into French, by M. Axenfeld, in the *Annales des maladies de la peau et de la syphilis*, April, 1851, and *Gazette des Hôpitaux*, for the same date, by M. Sée.

the throat, and in the commencement were attended with an ulceration of the tonsils; an eruption of blotches covered the whole body. This woman, at the same time, had a vaginal blennorrhœa.

"On the next day, August 7th, and the following days, the wounds made by the scarifier and the intermediate skin, were slightly inflamed; but at the end of four days the wounds were all closed: there was no trace of inflammation, and the whole surface in general resembled that which has healed after scarification.

"On the 15th August, I remarked at the seat of inoculation, some red spots, and on the 30th August, consequently twenty-five days after inoculation, I discovered fourteen cutaneous tubercles, the majority of which had arisen even in the cicatrices of the wounds. These tubercles were almost all confluent; four only situated on the edges were isolated; their base was large, their size that of a lentil, in many that of a pea; hard to the touch; most were of a deep red, some of a deep yellow color; their form was perfectly round; on some there was a slight desquamation; nothing abnormal in the other parts of the body—(no treatment). On the following days, the tubercles still increased in volume, and became blended together; they then represented a patch about the width of a dollar (*thaler*), were soft, projecting half a line above the level of the skin, and covered with grayish scales, which became thickened and finished by forming the large crust common to tubercles. In cleaning this surface with hot water, the crust became detached, and the tubercles then appeared under the form of flattened elevations, slightly excoriated, but which were promptly covered with new, thin, dry, and grayish scales.

"The 27th September, twenty-seven days after the appearance of the tubercles, and fifty-two after inoculation, a *maculated syphilitic* eruption appeared on the skin covering the lower part of the abdomen, chest, and back.

"These spots were for the most part united, some were a little prominent, isolated, of the breadth of a millet-seed or a lentil, of an oval and elongated form, some of a pale yellow, others of a reddish-gray tinge, without areola, itching or pain, completely dry, without crusts and scales. The next day, and the following, the number of these spots prodigiously increased, and the whole body was covered. There was no febrile disturbance nor was there any symptom of catarrh, &c. In the early part of October, some of these spots became elevated into pimples, others into tubercles, and altogether had a physiognomy so characteristic, that without inquiring into the antecedents, any physician would at once have pronounced them to be syphilitic. There was no affection of the throat; but as this papular and tubercular eruption sufficiently proved the success of the inoculation, I now feel justified in giving publicity to the case."

I still repeat that there was here, between the inoculation of the secondary accidents, and the true results of the infection, a period which is not observed to follow the inoculation of chancre. And I would here especially remark, that the wounds for the inocula-

tion were dressed with charpie, and that they were thus guarded against any other fortuitous inoculation.

When I come to treat of ecthyma, I shall detail the facts connected with the inoculation of this secondary accident, which will present the same peculiarities. Occasionally nothing appears on the point inoculated for a long time, the true syphilitic eruption being the first to manifest itself.

The case which I am about to relate, in detail, the particulars of which were carefully collected by my former *interne*, M. Pellagot, differs from those which have been published by the experimenters whom I have quoted. We here find the morbid secretion of a mucous tubercle producing in the first place a most abundant and most fetid suppuration, then an ulceration, and lastly, a patch analogous to a mucous tubercle. As it has been pretended that the blistered surfaces, which after the inoculation became transformed into tubercles, were nothing more than vegetating blistered surfaces, I was careful to make the counter proof; on the right arm, indeed, we observed a blistered surface, which on being irritated for four days with strong blistering ointment, desiccated, healed without ulceration, or papules, whilst the same surface dressed only twice a day with the morbid secretion, became the seat of the most active inflammation, of an ulceration, in fine, and of a patch analogous to mucous tubercles. In addition to the students who ordinarily attend my visits, the subject of these experiments was seen by Drs. Morel, Chausit, Auzias, Turenne, and M. Gosselin.

P. æt. 19, tinsmith, temperament lymphatic, constitution very good, was admitted, July 17th, 1851, into Ward No. 10, bed No. 1, service of M. Vidal. Had had no previous venereal disease; Four or five months since had a chancre on the corona glandis. This chancre lasted a month, after which it cicatrized. An induration remained in the situation of the chancre. Itchings begin to be felt about the anus, and mucous tubercles to appear.

Present condition.—On the glans, where the chancre was seated, the mucous membrane is red, thickened, and unbroken. Between the glans and the prepuce, there exudes a very thin scanty seropurulent fluid. Two inguinal glands much developed, on the right side, a small one on the left. The whole are indolent. The sub-maxillary and anterior cervical glands enlarged. Posterior cervical glands not visible. About the anus are three mucous clusters non-ulcerated. Up to the present time has submitted to no treatment.

On Thursday, July 24th, a small blister was applied to the left arm. It was covered with a watch-glass. Pills of *mica panis*.

Friday, July 25th, first dressing. The epidermis raised by the blister is removed. A disk of blotting-paper covered with cerate, with an opening in the centre, of one and a half centimetres in diameter, is so applied to the wound as to secure the margins. The central part is dressed with carded cotton saturated with pus taken at the moment of dressing from mucous tubercles about the anus of a patient, in bed No. 38, of Ward No. 8, service of M.

Puche. The whole is covered with a watch-glass, and secured by straps of diachylon plaster.*

Saturday, July 26th. Second and last dressing with the same pus as before. The old dressing is removed. Suppuration considerable. The odor resembles that from mucous tubercles. The wound is converted into a whitish diphtheritic-like pellicle, with black spots at certain points. In removing this pellicle, which adheres, and is torn by pulling, a slight bloody exudation is produced. The edges of the watch-glass have cut the skin and produced at its upper part a superficial excoriation which is distinct from that produced by the blister.

Sunday, July 27th. The solution of continuity which was before superficial, is deepened and has assumed the form of an ulcer, the edges of which are perpendicular to the base. The latter is of a yellowish-white color, and secretes a large quantity of well-formed pus, but of an intolerable fetor. In wiping with a compress the surface of the wound, we remove in part the false membrane that covers it, and then there is a little bloody exudation. The excoriation, produced by the edges of the watch-glass is converted into a deep notch which suppurates abundantly. The watch-glass is no longer used. Simple dressing with cerate.

28th. The ulcers remains the same. It secretes an enormous quantity of pus always very odoriferous. The edges are red, perpendicular, and the base of the sore yellow. No enlarged glands are felt in the axilla. Simple dressing with cerate, and renewed twice a day.

30th, 31st. The wound retains the same characters; the suppuration always abundant and nauseous. Dressed night and morning.

August 1st. A blister similar to that on the left is applied to the right arm, and like the latter is covered with the watch-glass.

2d. The blister on the left arm remains in an ulcerated state; that on the right is dressed for the first time. The epidermis is removed, and a round shield of blotting-paper covered with blistering ointment is placed upon the wound. It is covered with a watch-glass. The left arm dressed with simple cerate.

3d. *Left arm.*—Flesh granulations begin to appear on the base of the ulcer which is partly cleansed, and is now of a coppery-red color. The suppuration is still very considerable and disagreeable. Dressing, simple cerate.

Right arm.—The blistered surface has copiously suppurated; its surface is red, and the granulations not diminished. The watch-glass has produced a complete circular notch. Dressing of blistering ointment; watch-glass no longer used.

* The following was the diagnosis of M. Puche, in reference to the accidents on the patient that furnished the matter for inoculation. Indurated chancre on the edge of the prepuce for four or five months, treated by an apothecary and healed. Mucous tubercles on the scrotum of fifteen days' standing. Mucous tubercles at the margin of the anus. Roseola nearly effaced. Ulceration on the right pillar of the velum palati. Rheumatic pains. No other symptoms. The pus for inoculation was taken from clusters about the anus.

August 4th. *Left arm.*—The fleshy granulations have multiplied. The base of the wound is now on a level with its edges. The superior ulcer, caused by the watch-glass, does not yet seem inclined to cicatrize. Simple dressing.

Right Arm.—The blistered surface is of a rose color, and is not depressed. The circular notch produced by the watch-glass is effaced and replaced by a superficial excoriation. Dressing, blistering ointment.

Aug. 5th. *Left Arm.*—The ulceration is replaced by a red layer, from two-fifths to four-fifths of a line in height, surface of a coppery red, and irregular. The circumference of this layer is quite limited and not hard. All around it, that portion of the blistered surface which has not been in contact with the specific dressing is red, without granulations, and covered with thin crusts formed by concrete pus. The wound produced by the watch-glass healed without granulating. The suppuration is somewhat less but always fetid. On wiping the wound with linen, it produced but a slight bleeding. Dressing of simple cerate.

Right Arm.—The wound presents the same aspect; it is of a rosy color, granulated, and not ulcerated. Dressing with the blistering ointment.

Aug. 6th. Both blisters dressed with the cerate.

9th. *Left Arm.*—The notch made by the watch-glass has healed. The diameter of the fungous growth is somewhat less, and it still projects from two-fifths to four-fifths of a line above the level of the surrounding parts. It is circumscribed by a reddish-brown circle, and its surface always presents the same irregularity, softness to the touch, still furnishing a little pus somewhat less odoriferous. Simple dressing.

Right Arm.—Nothing special. Cicatrization has commenced.

Aug. 11th. *Left Arm.*—The wound is as large as a franc piece, and distinctly circumscribed. The granulations covering it are united together in such a manner that the surface is less unequal; it is of a pale red and somewhat copper colored, soft to the touch, and a little bloody when chafed by the linen. The suppuration, however, is now small in quantity; it still has an odor. Simple dressing.

Right Arm.—Completely cicatrized. No dressing.

Aug. 23d. The left arm has been dressed every morning during the visit of M. Vidal. The cluster has not changed its aspect; it is always about four lines in diameter, rising above the level of the surrounding tissues which have resumed their natural color. The surface is covered with soft fungous growths, not bloody, of a yellow color, and furnishes a certain quantity of pus.

27th. No change.

29th. There is an inflammation which appears as if inflated. Above this is an ulceration which is hollowed on a rose-colored protuberance, covered with a cicatrix thin and transparent, which has been produced in the twenty-four hours

30th. The rose-colored tubercle, in the centre of which the wound existed, has disappeared. The ulceration is now on a level

with the surface of the skin; it is superficial, of a yellow color, and always of the same extent.

The patient left the hospital. Nothing on the penis. The mucous tubercles about the anus are dry and have almost entirely disappeared. No eruption on the skin. During his stay in the hospital discovered no roseola.

In the second week of September, the patient, who resided at Versailles, came to see us. He exhibited the arm inoculated, and in the centre of the blister we found an elevation, resembling a waistcoat button. It was dry, and of firmer consistence than the tumefactions which we have already observed at the same place; in fine, it resembled certain mucous tubercles that form on the skin of persons of dark complexion.

Such is the case as reported by M. Pellagot.

It may be objected, that, in this case, the blister on the left arm, was but the exciting cause of the accidents observed on that limb, as the subject inoculated was fully infected with syphilis, and had mucous tubercles at the anus. But why did not the second blister, that on the right arm, produce the same effects?

An ulcer, with a yellowish base, followed the active inflammation of the inoculated blister, and on this base a papule was developed. It may be urged that this ulceration was a chancre, and the papule a transformation of this chancre, which remained susceptible of the change. At first, the glands, in the vicinity of the points inoculated, were not enlarged. I am perfectly aware that we may have a chancre without a bubo, and yet I note this circumstance. Further, it is of but little consequence whether this was a chancre or some other form of ulceration, for I do not pretend by inoculation to reproduce the same form of lesion as that which furnished the matter for the purpose. This is not the question; but the problem is, to know whether a syphilitic affection can be communicated by the product of papular eruptions. Some may go so far as to say that I took the matter from a chancre, instead of a papular eruption. To this, I reply, that Mr. Puche made the diagnosis impartially.

These facts leave no longer room for doubt: the mucous tubercle may be inoculated and is contagious. I have already stated that M. Ricord stands almost alone in denying its contagiousness. But even by his own words, we may compel him to acknowledge the contrary. Indeed, at page 182 of his *Traité pratique des maladies vénériennes*, we find these words which I transcribe: "But *contagious by some incomprehensible vital action*, and which cannot be explained, the mucous tubercle cannot be transmitted by inoculation." Thus, M. Ricord is evidently a contagionist, and he makes a distinction between physiological inoculation, which is contagion, and experimental inoculation. The latter only he rejects. MM. Baumés, Reynard (of Toulon) and other writers on syphilis who regard the mucous tubercle as contagious, do not admit its transmissibility by inoculation. In a practical point of view, this rejection is of no importance if we admit its contagiousness. But it is probable that if the writers on syphilis who deny the second

mode of propagation, had adopted the proceedings of Wallace; if they had repeated to a sufficient extent his experiments; if they had not formed their conclusions until the required period of incubation had passed, a very long time when secondary accidents are inoculated; if these writers had properly performed their experiments, they would have observed results analogous to those witnessed by Wallace, M. Bouley and all those who are aware that the circumstances are different in the case of inoculation with the matter of secondary accidents, from those which attend the same proceeding with that from primary accidents.

Treatment.—Regarding the mucous tubercle as a consecutive syphilitic accident, it may be stated that it is one which soonest appears and disappears. Rest and cleanliness are often sufficient to cause its disappearance from the genital organs and the anus, and this, too, in the course of twenty days, especially when they are not of long standing, nor complicated.

Patients in my service affected with tubercles about the anus or the genital organs, take a hip-bath daily, except on the day of using the general bath. By these repeated washings, and rest in bed, the tubercles shrink, and rapidly disappear. M. Baumés adds from one to three drachms of corrosive sublimate to the hip-bath. He applies a lotion of pure chloride of sodium, if the tubercles are not ulcerated and surrounded by an inflammatory areola. When these complications exist, it is better to dilute the chloride with a certain quantity of water, so that it may produce only a slight smarting sensation, and not a real pain.

The following is the formula of M. Baumés:

℞. Chlor. Calc. vel Sod. ʒ vi.
Aq. dist. ℥ xvi.

This solution may be changed for that of the acetate of lead, sulphate of alumina and potash. Some practitioners prefer corrosive sublimate. From three to fifteen grains may be dissolved in two ounces of water, according to the susceptibility and irritability of the parts. We have then in view not only the local treatment, but a certain influence on the diathesis, which I believe to be an illusion. The nitrate of silver is the substance that should be preferred. It not only hastens reparation, but it is the agent which most promptly subdues the pain, relieves the smarting sensations, and the pruritus with which the patient is harassed during the night. The tubercles about the anus and perineum, which are more or less ulcerated, and the secretion of which inflames the surrounding skin, are those which produce the greatest suffering Relief is afforded by the following application:

℞. Nit. Argent. ʒ iss.
Aq. dist. ℥ iiiss.

This may be repeated every three days, until the tubercles are evidently modified.

After each cauterization, the hip-bath is to be used, and the parts should be washed with a decoction of poppy-heads, or a dilute solution of opium. They may also be touched with a crayon of the nitrate of silver, especially when we wish to limit the action of the caustic, as in cases of superficial ulcerations, or if the tubercles assume the form of condyloma; we may then, by cauterizing a little more thoroughly, gradually destroy the excrescence, to the extirpation of which by the knife the patient may be opposed. The crayon is especially to be preferred in treating those tubercles which grow in cavities or on the uterine neck. Those in other regions may be sprinkled with some inert powder, such as amidon, or calomel (*à la vapeur*).

I have never been an advocate for the use of ointments, either of mercury, the oxide of zinc, or of the iodide of sulphur. I have always found that their application only irritates the parts. Some practitioners employ them after the cure of the tubercles, in order to remove the stains that are left behind.

M. Baumés places a high value on the following ointment:

℞. Calomel, ʒ iiss.
Axung. ℥ viss.

At the commencement of my remarks on the treatment of the mucous tubercle, I stated that this accident is one that most readily disappears, either from cleanliness or from the treatment which I have already mentioned. I should also add, that it is one of the accidents that most frequently returns, and that is most speedily and surely reproduced, either under the same or some other form, when the above measures only are adopted. We should, therefore, administer a general mercurial treatment, which should be commenced at the same time with the local, or after some days of repose, especially if there be marked irritation, or inflammation. The latter is the course which I generally pursue. In the case of inflammatory complications, when the subject is young, I begin with blood-letting from the arm; this depletion is employed for the double purpose of subduing the inflammation, and of preparing the way for the action of the mercury.

M. Baumés recommends the corrosive sublimate according to the formula of Van Swieten, or in pills. I prefer the proto-iodide, which I administer as stated in speaking of the treatment of confirmed syphilis. I give the pills, when the tubercles exist with other accidents which show that the syphilitic diathesis is established. On the other hand, when we have reason to regard the tubercles as primary, the corrosive sublimate should be preferred.

PART SECOND.

CONSECUTIVE VENEREAL DISEASE (*VEROLE*).

THE diseases which form the subject of our present investigations have been called *consecutive*, because they generally follow those considered in the previous section, and because the syphilitic virus has so acted on both the fluids and the solids as to create a *special* constitution, for which reason these consecutive affections are also called *constitutional;* writers also speak of a *syphilitic diathesis* or *confirmed verole*, or simply the *verole.*

I shall treat of these diseases in two different chapters. In the first, I shall consider them in general; I shall thus pass in review their characters, the period and order of their appearance; I shall inquire into the causes that produce them, and shall consider the syphilitic fever, and the state of the blood during the verole; I shall afterwards discuss the question, whether it is possible to have syphilis more than once, and shall conclude with an important chapter, viz., the treatment of syphilis. In the second chapter, I shall treat of consecutive venereal diseases in particular.

CHAPTER I.

GENERAL REMARKS.

SECTION I.

CHARACTERS.

THE title of this chapter indicates what I have already stated, that the diseases which we are now investigating appear after those which have been studied in the preceding section. But I have not been absolute, and by my reserve I wish to show myself faithful to the principles which I have advocated in considering the subject of *physiological absorption*, which is the introduction of the syphilitic virus into the system, without ulceration, and without previous inflammation of the surface to which it is applied.

Virus absorbed by a sound surface may produce precisely the same effects upon the system as that which has given rise to the so-called primary accidents, the diseases of this second section may therefore be primary; they may appear at once (*d'emblée*), and be the first manifestations of syphilis. But they are commonly observed after a longer or shorter interval from the first syphilitic impression; they are apt to appear at several points, and in different regions at the same time, or successively, and may extend over a large surface; on this account they are called *general* affections. The syphilida, which may be seen growing at all points of the cutaneous surface, present a remarkable example of this form of venereal disease. On the contrary, the lesions most frequently primary are generally confined to the narrow sphere of contagion, hence they are called *local.*

All the tissues may be invaded by syphilis, from the epidermis, the dermous and cellular, to the fibrous, osseous, and parenchymatous tissues. The lesions assume the most varied forms, from the simple pimple, to the largest sized tumor. Their color is of a reddish, *coppery* tinge, peculiar to the majority of these diseases; it is so characteristic, that it has been called the *syphilitic tint.* As a subjective symptom, nocturnal pains often exist; they are so inseparable from certain consecutive lesions, that their existence alone leads to the suspicion of syphilitic infection. Their progress is generally slow; we do not observe those severe inflammations which attend the primary accidents. They are rather alterations, which are slowly destructive; for obstinate ulceration seems to be the characteristic of syphilis when left to itself, and it infallibly produces this effect in bad constitutions, and where complications exist. If the influence of specific treatment in primitive venereal disease may be questioned, such is not the case here, for nature, in the majority of cases, is impotent, and simple measures are of no avail. On the contrary, in certain of the syphilida, the mercurial treatment, and in certain tumors the iodides of potassium, exert sometimes so prompt, so direct an influence, that it is impossible to deny their efficacy- But even here, we should not exaggerate the power of therapeutical agents, and undervalue that of the *vix medicatrix naturæ*, which alone may cure the worst cases, when heroic means have failed. We will only observe, that such are very exceptional cases.

SECTION II.

PERIOD, AND ORDER OF APPEARANCE.

When several consecutive accidents occur, they generally appear at different epochs. This fact has been noticed by every observer. It has even been assumed, that they appear in a certain order. But these periods have not been definitely fixed, and this order, as is proved by observation, is not completely regular.

According to Hunter, the period at which consecutive accidents appear, varies according to the susceptibilities of the parts in-

volved. In this point of view, there are *parts of the first order* and *parts of the second order*. Those of the first order, that is, the most susceptible, are the skin, tonsils, nose, throat, internal surface of the mouth, and sometimes the tongue; in other words, the skin and certain mucous membranes. Those of the second order are the periosteum, the aponeuroses, and the bones. Hunter attributed great influence to the air as a determining cause of constitutional affections, believing, as he did, that the morbid action was exerted more directly on the integuments, in consequence of the contact of the air producing there a greater susceptibility. Applying the same theory to the evolution of diseases affecting the second order of parts, Hunter showed that the parts of the skeleton nearest to the skin, were affected before the deeper seated bones; thus the bones of the head, the tibia, the ulna, the ossa nasi, become more frequently and more quickly affected than those of other parts. He also supposed that the susceptibility might depend on the structure of the bones; it therefore depended both on the proximity of the skin and the hardness of the osseous tissue. Hunter, moreover, acknowledged that *this order might be inverted*, and he admitted the possibility of the lesion of the parts of the *second order*, the first having never been affected, that is to say, Hunter having a mind eminently disposed to generalize, lost no opportunity of so doing; but as he was at the same time a profound observer, the exceptions did not escape him, as he was sometimes sufficiently candid to acknowledge. Hunter, besides, never spoke of *immutable* laws, as he was too well acquainted with the nature of disease; he was well aware, that it is particularly during the existence of disease that laws are not constant.

Thus in adopting the philosophic views of Hunter, and receiving his theory at its proper value, we may admit and sanction, to a certain extent, the two orders of lesions he established, and this too from undoubted analogies and proof the most direct. Indeed, when the syphilitic virus is applied to the living tissues, every part does not react equally against it, or rather, is not similarly affected at the same time. The integuments, as a general rule, are the first affected, or furnish the first manifestations of the impression they have received. This is not peculiar to the syphilitic virus; all morbid agents of this class produce analogous effects; indeed, the virus of rubeola and of variola manifest their first effects on the skin by exanthematous and pustular eruptions, which are irritated by the syphilida; for the rubeola and the variola are repeated by roseola and a certain form of ecthyma. The parts belonging to the second order, according to Hunter, are the fibrous and osseous tissues of a much lower grade of action and vitality than the skin and mucous membranes; consequently, when morbid changes occur it is only after they have manifested themselves on the integuments. The skin, besides, being exposed to view, its slightest changes of color and stains are seen even from the commencement, whilst analogous phenomena, passing in the subcutaneous tissues, the periosteum and bones, cannot be known, for there the lesions become appreciable only after a tumor has

formed, when in fact they have existed for a much longer period. Thus, whatever view be taken of the matter, it will be seen that the cutaneous affections must be observed, before those more deeply seated. This has been noticed by the most simple observers, but those who know how to interrogate nature completely, will admit it as a general though not an absolute rule. M. Ricord adopts the division of Hunter, and denominates the diseases which affect the parts belonging to the first order, *secondary accidents*, and those of the second, *tertiary accidents*, because he places at the head *primary accidents*. Syphilis may therefore be completely embraced in the following summary:

1st, Primary Accidents.
2d, Secondary Accidents.
3d, Tertiary Accidents.

This division is an old triade; for we find it complete in Thierry de Hery, and it has been traditionally handed down by every writer who has followed him.* M. Ricord has rejuvinated it, has rendered it popular, by descending from his high philosophical position, and by representing it as based on experiment. This, too, has been done at a time when this method was much in vogue, and it has been represented as being capable of simplifying the study of syphilitic diseases. It is, therefore, greatly admired by certain minds, which are satisfied with a superficial investigation of matters, and which have not the time to sift them to the bottom. Those, however, who like a thorough investigation, discover in this classification, serious and very grave objections. But as most of its opponents were not convinced of the utility of resorting to experiment, as they believed in its dangers and judged it immoral, they are disposed to neglect and even censure this means of *popularity;* hence their little success compared with those who attach so much importance to this method of investigation. However, among these opponents, there are some, who relying chiefly on observation, still know the value of experiment, and believe that when employed within certain limits, it may be advantageous to science, and that it does not violate the laws of morality properly interpreted. They therefore experiment more philosophically; that is, without losing sight of observation, and not satisfied in addressing the mind alone, they speak also to the senses, and it was especially by means of experiments, that they

* "*Thierry de Hery. La Methode curatoire de la maladie vénérienne*, p. 133. Several symptoms or accidents are common to this disease, some of which precede, others follow, and others again supervene on these. Those which precede are ulcers of different kinds: *ardor urinæ*, buboes, which being said to precede, though they may be equivocal, and may or may not arise from contagion, do, nevertheless, most generally precede, and may serve as precursors of the disease. The others, which we call consecutive, are pustules and ulcers on all parts of the body, principally on the private parts, the fundament, the mouth, the throat, the forehead, and the emunctories. In like manner, there is also a falling off of the hair commonly called peloda, articular pains, often also wandering, but seldom nodosities.

"The latter which we call superadded or extraordinary, which appear after imperfect cures, &c., &c., &c.

successfully attacked the errors of this method. In speaking of mucous tubercles, I have already shown their inoculability, a fact which had been denied by the advocates of experiment, that is, of partial experiment: we shall soon meet with remnants of the errors of this same experimental method. I commence with the classification.*

1st. *Primary Accidents.*—There is but one, viz., chancre, which once cured, cannot be reproduced unless by fresh contagion. It may be inoculated but cannot be transmitted hereditarily.

A. It has already been demonstrated in this work (first section), that there is a virulent blennorrhagia; chancre, therefore, is not the only primary accident. *B.* It is very true that chancre may be inoculated, readily inoculated; but it must be added that it cannot always be inoculated.

2d. *Secondary Accidents.* — These embrace certain cutaneous eruptions, as well as certain affections of the mucous membranes, and their dependencies, and particular morbid conditions of the eye, and lymphatic glands. These accidents, without being inoculable, can be transmitted only hereditarily; they seldom occur before the third week after the primary accidents, and still more rarely after the sixth month.

As to the transmissibility of the secondary accidents, aside from hereditary descent, the doctrine is proved by the fact of the infection of the nurse by the child affected with consecutive tubercles, and the contagiousness of the mucous tubercle in the adult; it has been proved by the experiments of M. Cazenave, Wallace, Waller, M. Bouley, M. Richett, M. Litthmann, by my own, and by those of other experimenters. Under the head of mucous tubercles experiments have already been mentioned, and when we come to treat of the pustular syphilida, we shall find certain facts which leave no doubt on the subject. The distinction, therefore, between the primary and secondary accidents, which rests on their transmissibility, a distinction to which so much importance has been attached, is destroyed both by experiment and clinical observation. Both primary and secondary accidents are inoculable.

B. With reference to the time of the appearance of secondary accidents, it has been stated, that as a general rule, it is seldom before the third week, and rarely after the sixth month. This, nevertheless, is not true, at least according to those observers who have devoted especial attention to the subject. Thus, MM. Legendre, Martins, and Cazenave, have fixed upon a medium far above the maximum time laid down by M. Ricord. M. Legendre, one of the most distinguished pupils at the *San Louis*, author of a remarkable thesis on the syphilitic eruptions, thus remarks: "I have obtained, as a general medium, from the time of the appearance of the primary to that of the secondary accidents, (syphilida,) five years, precisely the same result as that mentioned by M. Martins in his Memoir."

3d. *Tertiary Accidents.*—These consist in special alterations of

* The propositions are numbered; the objections are indicated by the letters.

the sub-cutaneous cellular tissue, of the testicles, and the fibrous and osseous tissues of the deeper seated organs. These accidents cannot be inoculated, neither can they be transmitted hereditarily with their peculiar physiognomy; yet, by a kind of degeneration or modification of syphilis, they may become one of the most fruitful sources of scrofula.

A. I shall be guarded in my remarks on these points. It will be necessary, moreover, to consider these questions again in our remarks on infantile syphilis. I will say, however, in advance, that this doctrine of the transformation of one disease into another, especially into the formation of a diathesis, is an ancient one, and that there are but few arguments in its support. *B.* M. Ricord observes that tertiary accidents never appear before the sixth month, and may manifest themselves several years after the appearance of the primary accidents. To this I would reply, that I have seen cases of periostosis at a much earlier period, even during the existence of the primary accidents, and long before the sixth month. Besides, it may appear *d'emblée*, that is, as the first manifestation of syphilis.

In conclusion we would remark, that the division into three orders, based on their transmissibility or non-transmissibility, is only arbitrary, and that the period of their manifestation is not perfectly defined. The fact, moreover, even though it be exceptional, of the actual occurrence of both the secondary and tertiary accidents *d'emblée*, destroys the value of any character derived from the interval of the primary and the other accidents, since the pox may consist simply of a syphilitic eruption or an exostosis, without any other preceding syphilitic affection.

It should also be known that the three divisions above mentioned cannot represent all the distinct accidents, all the phases of syphilis. Thus, after chancre, sometimes long after its cure, a really syphilitic bubo may appear, which cannot strictly be considered as a primary accident, since it has been preceded by another accident. It is denied a place among the secondary accidents, since it is inoculable, and the doctrine is, the non-inoculability of secondary accidents. A *successive accident* has therefore been established. But as the same accident, the same bubo, may exist without a preceding chancre, *d'emblèe*, it is therefore sometimes *primary*, sometimes *successive!* Now, examine carefully the different accidents belonging to the third category, and it will be found that from the special affection of the sub-cutaneous or sub-mucous tissue, this kind of tubercular cutaneous disease, to the appearance of an exostosis, a very long time, even years may pass. These tubercles are frequently even nearer the secondary than the tertiary accidents. They have been called the *accidents of transition.* Thus, we have two orders of accidents, the *successive* and those of *transition*, which altogether raises to five, the number of orders of syphilitic accidents, or, if disposed to admit them only as fractions of accidents, perhaps this number will not be maintained; but, in either case the *triade* will be compromised, for it is necessary to fix on some definite terms. It must not be supposed that these phenomena are always developed in the same manner, having the same relations

in the three great divisions; they will be found, on the contrary, to change according to the requirements of the system. Then comes the inversion, that is, the appearance in the last place, of an accident that passes for secondary, as in the case of certain of the serpiginous syphilida, which occur after an exostosis. I have already stated, that Hunter alluded to this inversion, and that Thierry de Hery placed these serpiginous ulcerations among the lesions of the third category; he called them *wandering* (*canibulatifs*) *ulcers.*

I do not state these numerous objections for the mere pleasure of the act, but to render the young practitioner familiar with the exceptions, especially since they are so numerous and important, and to show that what appears very simple when seen from a distance and in the schools, may in reality be very complex when closely examined, and in the presence of nature. In the majority of cases, indeed, the *cutaneous* venereal disease does follow next in order to the primary accidents; then come the *sub-cutaneous* affections. In both orders the highest forms are first observed; the period passed in incubation, in relapses, tends to aggravate the lesions which are about to appear. Thus we see the *cutaneous* lesions assume at first the light and superficial form of the exanthemata, and after awhile, sometimes after repeated relapses, reach the state of the perforating tubercular syphilitic eruptions. As to the *sub-cutaneous* lesions, we observe the cellular, then after awhile the fibrous and osseous tissues attacked, and finally the viscera become invaded, and the diathesis after a time passes into a state of cachexia. Such is the general course of events, but this is not always the case, a fact which should be carefully remembered if we desire the truth, and would avoid deception.

SECTION III.

EXCITING CAUSES.

I have already stated that the syphilitic virus may remain a cause without effect, and that the diathesis may not be established, by the simple absorption of this agent. Other causes are required to develop this diathesis. These have been sought for in the idiosyncrasy, sex, age, temperament, hygienic and pathological conditions.

It is evident that every subject is not equally favorable to the development of the diathesis; some there are, who are completely refractory to its influence. In them, the virus, when introduced into the system, remains always in an inocuous state, or rather it is destroyed and expelled in some unknown manner; indeed, well-marked chancres in certain subjects, when left to themselves, or treated by very mild and insignificant means, have been radically cured; in other words, the reparation of the ulcer has been complete, and nothing of a syphilitic character has been observed to follow in these patients. The advocates of the physiological

doctrine, those who deny the existence of a virus, and whose treatment corresponds with such an opening, have published numerous facts, to show that the virus in its effects may be limited to the production of the *primary accidents.* This is a well-known fact. But we do not know the influence of age, constitution, temperament, sex, which can most frequently assure us of this immunity. It has been supposed that strumous constitutions were most favorable to the development of the consecutive accidents. Facts have proved only, that under such circumstances, syphilis produces its greatest ravages, and nothing more. We must also take into account the fact that very numerous cases have occurred to prove that most excellent constitutions have equally suffered from syphilis as have those the most deteriorated. As to the influence of sex, I can only say, that at the *Lourcine*, in the female service, comparatively speaking I have less frequently observed cases of *confirmed* syphilis than at the *Hôpital du Midi*, where only males are now treated. This I speak from memory, as I have no statistics by which to establish the influence of sex in the production of consecutive accidents. But it is generally admitted, that in the female, syphilis is less grave than in the male. As to age, it may be observed, that during infancy, syphilis being hereditary, we find only the so-called *secondary* accidents; these are generally pustules, bulla, and seldom erosions, in which case the disease is very severe. As we pass from infancy, constitutional syphilis is less common. In the adult, consecutive affections become again more frequent and aggravated. These accidents, then, are not only attended with greater danger, but the graver are more frequent than the lighter forms of the disease.

There are hygienic circumstances, and others which may be called pathological, which exert a real influence on the production of consecutive accidents. Thus, inadequate nourishment, excessive indulgence at the table, excessive fatigue, a sudden change of temperature, may exert a powerful influence on the development of constitutional syphilis and its relapses. It has been known to appear after going from a warm to a colder or more humid climate, and cures been known to follow the opposite change. The influence of temperature, however, on the production of consecutive symptoms, should not be exaggerated, for facts show that both cold and heat may in turn prove an exciting cause; thus I have observed the case of a blacksmith who had syphilitic eruptions only on the fore-arm, the hands, and parts most exposed to the fire of the forge. Carelessness, want of cleanliness, and misery, seem favorable to the development of certain accidents; this we may daily find illustrated among the unfortunate workmen who enter the *Hôpital du Midi*, covered with mucous tubercles, and who obtain prompt relief by simple repose, and local and general bathing.

As to the pathological circumstances, syphilitic eruptions have been seen to follow an attack of fever. But who knows that this was not a syphilitic eruptive fever? A syphilide has really been

seen to follow an inflammation of the abdomen, and the chest. However, on this point, that is, the influence of pathological circumstances, writers on syphilis are less unanimous than on that of hygiene.

SECTION IV.

SYPHILITIC FEVER.

This, strictly speaking, resembles that of the eruptive fevers, for it occasionally precedes the syphilida, and generally subsides when the eruption appears; it also sometimes remains, or exists, in connection with some one of these symptoms. If fever consisted entirely in an acceleration of the pulse, surely there would be but very few syphilitic fevers, preceding or accompaning the consecutive accidents; syphilitic fever, such as that observed by M. Castelneau,* and described by M. Chausit,† attends only the primary accidents. It is not that the blood is not profoundly altered when this fever follows the consecutive accidents, but it then has the chronic character which these accidents generally assume, and the troubles of hematosis are generally manifested by symptoms of chloro-anemia.

The modifications of mobility and sensibility are less obscure. Thus before the appearance of certain syphilida, the patient complains of painful weariness, weakness, and loss of muscular power, precisely in the same manner as is observed when the eruption is about to appear in infantile syphilis. What is particularly well marked, are the changes, which have been compared to neuralgic or rheumatic pains. They are felt principally on the head, in the vicinity of the articulations, sometimes in the lumbar region; they are the rheumatic pains of modern writers. They precede the appearance of the lightest forms of accidents, called *secondary*, and may likewise usher in those more deeply seated, and accompanied with relapses. These rheumatoid pains are not constant, there being often a kind of intermission, and the paroxysms are excited by heat, especially when in bed. According to M. Ricord, the patients who thus make day of night, may invert the order of the attack of the paroxysm. This is not absolutely true. The same writer has attempted to make a distinction between these pains and osteocopes, which belong to another stage of the disease. The rheumatoid pains are not at each paroxysm seated in the same place, and during the intermission, pressure does not reproduce them; on the contrary, some patients find relief by resorting to compression, at the moment when the paroxysm commences, and by moving the painful limb. Exposure of the limb to the action of cold, produces also the same happy effect. The color of the skin, and the temperature, remain unchanged, nor is there any tumefaction. The case is quite different when the pains depend upon profound lesions of the bone.

* Vide *Annales des maladies de la peau et de la syphilis*, t. ii.
† Vide the same journal for April, 1852.

Hunter alluded to the syphilitic fever, and those who are engaged in examining claims of priority, should know that this writer first asserted that this fever strongly resembled the rheumatic fever.* In speaking afterwards of the constitutional symptoms, he speaks of pains like *rheumatic pains*.† But generally, Hunter regarded this fever as an accompaniment of the consecutive lesions and not as a forerunner of the disease.

M. Ricord has attached great importance to the enlargement of the glands in the posterior cervical region, as the first indication of infection. This glandular enlargement, which is but a consecutive bubo, really occurs in the region mentioned; but the same condition exists in every region where glands are found, and when sought for, may generally be detected. I will repeat, besides, what I stated in speaking of adenitis, which is regarded as the inevitable companion of indurated chancre; viz., the same tumors may be produced by the slightest ulceration, the least pimple on the skin; and as they depend upon a strumous affection, and may be anterior to the syphilitic attack, their importance should not be over-estimated in forming a diagnosis.

SECTION V.

STATE OF THE BLOOD IN SYPHILIS.

I have already proved, and shall again demonstrate, that certain morbid products, during an attack of syphilis, are inoculable; as to the normal secretions, these will be considered when we come to treat of the causes of infantile syphilis. We shall find that syphilis may be inherited from the father, by a certain alteration of the semen. I shall also discuss the question, whether a nurse can by her milk infect the child.

We are now to consider the state of the blood in syphilis. According to Waller, the *deglobulization* of the blood during the syphilitic diathesis would seem partly probable, from the aspect of the patients, and certain other accidents from which they suffer; but a demonstration based upon the analysis of the blood has not yet been made. Doctor Serch, at the request of Waller, subjected to a quantitive analysis, the blood of several venereal patients, without arriving at any positive results. M. Grassi, however, is said to have made analyses which showed that in the blood of subjects affected with consecutive accidents, the proportion of globules is diminished, and sometimes, in a very notable manner, the contrary obtains when the patients are under the influence of the primary accidents. The proportion of albumen was inversely to the quantity of the globules. This has led M. Dourvault, who has published the experiments of M. Grassi, to say: "In proportion as syphilis infects the system, the nutritive fluid gradually loses its

* *Hunter*, by Babington, Am. ed.
† *Ibid.*, p. 559.

strength, by the resolution of its globules into albumina."* I can only say, that subjects laboring under primary symptoms are sometimes very debilitated, and their blood is not rich in globules, whilst others whose systems are fully saturated, are plethoric.

The question has been considerably agitated whether the virus is only mixed with the blood, its connection being only physical, and therefore its properties remaining unmodified, or whether its properties are modified and changed. According to Waller, the idea of the simple mixture of the virus with the blood, is opposed to the principles of physiology, and experiment disproves it, by demonstrating that inoculation made with the blood is incapable of reproducing a primary chancre, whilst secondary syphilis may be thus communicated to sound subjects. Carmichael mentions two facts in confirmation of this; and they are also corroborated by Waller. The latter physician besides, has performed a most conclusive experiment, the details of which I will relate. According to Hunter the blood possesses no contagious property. "Could a syphilitic inflammation be excited in a previously-healthy wound, no person in whose blood the venereal poison circulated, that is who had constitutional syphilis, could escape a venereal ulcer whenever he was bled or received the scratch of a pin; the little wounds thus inflicted, would become transformed into so many chancres. Indeed, if the point of a pin or a lancet should be dipped in venereal pus, their punctures would become chancres.† Here is a doctrine, that lately has singularly obscured the question of the inoculability of secondary accidents. Hunter maintained that the virus combined with the blood, produced the same effects as the pus from a chancre; of course, it would produce chancres on the patient himself. Such being the case, it follows that it would produce the same effect when inoculated on a sound person. Waller has already responded to Hunter. Moreover, the question should be differently framed. It should be not whether the blood may transmit such or such a form of syphilis, but whether it can transmit syphilis under any of its forms. If not thus enlarged, it amounts to nothing.

Those who deny the possibility of transmitting anything by the blood, base their belief upon the facts showing that wounds on patients whose system is completely contaminated with syphilis, have been seen to heal like those on sound subjects, and on the immediate union which has followed after certain operations performed on persons infected with syphilis. This only proves that blood which, to a certain extent, has been changed, or which is mixed with a morbid poison, may supply the means necessary to cicatrization. This, moreover, had already been proved by the very numerous cases of union by the first intention, after the extirpation of a tumor, and during the existence of a decided cancerous diathesis: as, for example, after the palliative operations for cancer, when there can be no doubt as to the alteration of the

* *Gazette Medicale*, 1850, p. 200.
† *Hunter*, by Babington, Am. ed., p. 239.

blood. But these facts, furnished by pathology, and which I once undervalued, do not prove that the blood of a syphilitic subject cannot, under any circumstances, act even upon the individual himself, and produce syphilitic accidents in a certain order, and that this same blood may not be the vehicle of the poison, in transmitting the latter to the fœtus, through the mother. No one has ever denied the first; the second, which Hunter seems to reject, is now proved by carefully-observed facts: thus, the mother's blood is the medium of communicating to the child, to another being, the syphilitic poison. Both analogy and facts afterwards lent their aid to prove that syphilis may be transmitted by inoculating a sound person with the blood of one diseased. M. Diday, who, among the first in France, started the question of transmitting syphilis by other humors than the pus of chancre, speaks of the inoculations of glanders, of carbuncle, and of hydrophobia.

"Nothing," he observes, "goes to prove that the blood of a syphilitic subject, when inoculated on a sound person, will not communicate to the latter the disease." Returning to the proofs furnished by Hunter of the non-transmissibility by the blood, in a note M. Diday adds: "Hunter's argument proves but this, that he has here confounded the primary chancre with constitutional syphilis. Because the blood does not produce the former, is it right to infer *à priori* that it cannot produce the latter?"* I have already mentioned that Waller is in the possession of two facts of contagion from the blood, and that he has made an experiment which has not been answered; here it is:

"*Experiment with the blood of an individual affected with secondary syphilis.*—F., a lad, æt. 15, entered No. 5676, in infancy, had been troubled with the rickets, and, for the last seven years, had been affected with *lupus exfoliativus* on the right cheek and beneath the chin; this lupus, of the diameter of a little more than half a dollar (American) piece, with the exception of a small space on the cheek, had been cured, after long treatment, by cauterization and the hydriodate of potassa. This lad had never had syphilis, and, being a proper subject for inoculation, it was performed on the 27th July, 1850, on the left thigh. I took the blood from a female (Frennd), in whom secondary syphilis had been developed under our observation. This young girl, in other respects in most excellent health, had lately several times contracted primary sores, without having ever been affected with secondary syphilis. But during the treatment of the two last chancres, which succeeded each other after a fourteen days' interval, she became emaciated and pale, and, when the last chancre was healed, and there remained only a uterine catarrh, tubercles appeared on the face, and spots on the surface of the whole body.

"The inoculation was made in the following manner; the skin was scarified with a new scalpel, and, by means of a cupping glass, from three to four drachms of blood were abstracted. Notwith-

* Extract from the *Gazette Medicale*, Sept. 29th, 1849, first article on Prophylaxia, by M. Diday.

standing the rapidity with which the latter was done, the blood was still partly coagulated before it could be carried from the patient's chamber to that of the person to be inoculated. The wounds from the operation (performed on the child as in the preceding experiment)* were carefully cleansed and cleared of the bloody clots by warm water; the blood for the inoculation was then inserted into these wounds, partly by means of a small piece of wood, and partly by charpie saturated with the blood, which was applied and secured on the scarified parts. Neither inflammation nor suppuration followed; at the end of three days the wounds were completely closed. The patient continued well.

"On the 31st August, thirty-four days after the inoculation, I observed on the left thigh, at the point of inoculation, two distinct tubercles, of the diameter of a pea, of a pale reddish tint, dry on their surface, and attended with neither itching nor pain. In a few days they increased in size, became united at their base, and covered with scales, and both were surrounded by a dull red areola. The base of the tubercles, that is, the subjacent skin, and subcutaneous cellular tissue, became firm, tense, and an ulceration formed on the surface of the tubercles, which became covered with a thin and brown crust. In this manner, about the 15th September, an ulcer had formed, the diameter of which equalled that of a pigeon's egg, a coppery-red areola surrounded its borders, and it was covered with the crust above mentioned. This crust having been removed, the base of the ulcer became visible; it was of a funnel-shape, lardaceous, and bled easily at its edges. For some days previously an isolated tubercle had appeared on the right shoulder, as large as a pea, of a red color, and covered with thin scales. The patient could not tell the time of the first appearance of this accident. The general health remained good.

"On the 26th Sept., and the two following days, F. complained of a want of appetite, and sleeplessness. On the 1st of Oct., sixty-five days after inoculation, and thirty-two from the appearance of the first tubercles, an exanthematous eruption was observed in the lower part of the abdomen, on the back, chest, and thighs; this we pronounced a well-marked syphilitic roseola. The spots were precisely like those above described (in the first experiment), only at certain points they were somewhat more elevated. The ulcer on the thigh had acquired the breadth of a thaler (little more than the American half dollar), and still preserved its funnel shape, its lardaceous base, and coppery edge. A few days afterwards these spots became so numerous, that the entire body, not even the face excepted, was covered and appeared speckled. There was neither itching nor pain, nor symptoms of catarrh, nor fever. On the 6th Oct. several spots, particularly on the inner aspect of the thighs and on the abdomen, became raised into pimples or tubercles, and thence the diagnosis of the eruption, even without

* Waller alludes to the experiment mentioned at the end of the first section, whilst treating of the mucous tubercle. Small wounds were made with the scarifier.

knowing the antecedents, was attended with as little difficulty as in the preceding case.*

It will have been remarked that the wounds were covered with charpie saturated with blood, and that this dressing was secured. The wounds were therefore removed from the influence of every other contagion. Moreover, the period of incubation was so long that no one could for a moment suppose the intervention of the pus from a chancre, for it is known that after the inoculation of this pus, the local phenomena are not slow in their manifestations. M. Ricord maintains that there is then never a period of incubation.

SECTION VI.

CAN A PERSON HAVE SYPHILIS MORE THAN ONCE?

It has been pretended that the consecutive accidents express the true syphilitic diathesis, and cannot be repeated in the same individual, or more strictly speaking, that a person can have syphilis but once in his life, thus assimilating this disease with variola and rubeola, which ordinarily occur but once in the same individual. Thus far, this *law* which it is attempted to establish, has been based on mere assertions, and on analogical proofs. Now on this point, above all others, *statistics* are required. But it is difficult to find cases so complete that we may know that the syphilitic diathesis is exhausted, that it has produced all which it can produce, What is still more difficult, is, to collect under one head, a sufficient number of cases to form statistics, the result of which may be erected into a pathological law having a real value. The difficulties, we may add the impossibitities of such an undertaking, arise from the duration of syphilis, the modifications and even the suppression of certain of its manifestations by treatment, and finally from its relapses. Typhoid fever, variola, rubeola, and other diseases which are supposed to resemble syphilis,† are of an acute nature, and continue but for a very short period; a large part of mankind therefore remain liable to repetitions, which we may expect, and appreciate. On the other hand, in order that syphilis may have spent its full force, a considerable length of time is almost always required. The three stages characterized by the accidents called *primary*, *secondary*, and *tertiary*, have a very unequal duration, but as a general rule it is long. The length of the interval between the appearance of each accident varies also, and it is in general considerable. Take into calculation the number of days, and sometimes of months, required for the reparation of a chancre; note the months which intervene between the latter and the syphilida, and the duration of the cutaneous affections; remember also the lesions of the parts beneath the integuments,

* Waller, *Du caractére contagieux de la syphilis secondaire*, translated into French by M. Axenfeld, in 3 vols. of the *Annales de la peau et de la syphilis.*

† The *uncist* have finished with the discovery that we can have *hydrophobia* but once.

the glandular engorgements, the tumors of the cellular tissue, nodes, parenchymatous affections, like those of the testicle; add to this the time required before the fibrous and the osseous tissues may be invaded, and the gummy tumors, the exostoses show themselves with all their characters, that the patient may have what are called tertiary symptoms, and the really *tertiary* symptoms; make this addition of the time required that these different affections may be established, and then it will be seen how high is the number to which it is possible to arrive.

True, this is the chronic progress, unmodified by treatment, a circumstance not likely to occur. The patient is nearly always subjected to treatment, and receives from some practitioner a mercurial preparation. Now, it is admitted that these preparations have almost always the effect of retarding or of preventing and even of suppressing the development of the secondary accidents. The length of time that a more or less imperfect treatment may abridge the duration of the venereal disease, should therefore be represented when we speak of the full period of the disease. This is not all: in the column of the time required for the establishment of completely-confirmed syphilis, should figure the number which represents the time required for the removal of this diathesis, and the time required for its cure. Now, multiply by 2 the time required for the establishment of the disease, and we shall scarcely obtain that needed for its cure.

Add the whole together, and the sum will represent a period of such length as to render it impossible for the subject to gain a new chancre. It is known, besides, that some very distinguished practitioners maintain that confirmed syphilis is incurable. An individual affected with tertiary symptoms will always remain in that condition. If, therefore, my calculation be correct, and this opinion just, when we assert that an individual cannot have but once a disease which lasts for life, we proclaim a truth which is only but too true, an unfortunate circumstance for the *unicists*, especially since they have already stated that we can have the hydrophobia but once! I shall still be met with the objections that observation proves that certain subjects have been able to observe the origin, development, and disappearance of their diathesis in so short a space of time, as still to retain the power of enjoying pleasures, which expose them to syphilitic inoculation. This is true, and these are the cases precisely which furnish examples of the double infection. They may, indeed, contract a new chancre, a fact doubted by no one; they may afterwards have consecutive accidents, symptoms of syphilis, which every one admits, but with a different explanation. Thus the *unicists* do not attribute the last accidents to the last chancre, but to the first, that is to say, to the chancre most remote; and these accidents instead of indicating a new infection, according to their ideas, are but a relapse of the old disease. The first virus has remained dormant during a certain period of life, and on being roused new accidents appear. This is all hypothesis, coming to the support of other hypotheses, for the second consecutive accidents may be less pro-

found than the last which closed the era of the first contamination.

Thus, statistics are wanting in favor of the *unicity* of syphilis, and opposed to it are clinical facts, which, in unison with experiment, do not permit the least doubt as to the possibility of one person having several attacks of the disease. I have already referred to the inoculation performed by M. Bouley, physician of the *Lourcine*, who succeeded in producing a second syphilitic infection in a woman laboring under genuine tertiary symptoms. When treating of the mucous tubercles I analyzed the remarkable case reported by the *interne* of M. Bouley, which report forms part of an extensive article published in the *Annales des maladies de la peau et de la syphilis*, (Nov. 1851.) I believe that when this experiment of M. Bouley shall become well known, we shall no longer place any value on syphilitic vaccination; in other words, that the pox will not be given to patients to prevent the pox.

Moreover, the effects of the diathesis vary in number, intensity, and gravity, and all cases of syphilis are not alike. There are different degrees; some are more grave, more complete than others; from the simple roseola and the most transient and benign manifestations of the diathesis, to necrosis, caries, and the visceral affections, showing a profound cachexy, there are several degrees. As it has been proved that the virus may be limited in its action to the production of a chancre, and after its reparation, may leave the constitution perfectly sound, it is also established that this same agent may produce only a syphilitic eruption, the cure of which depends upon that of the infection. But as chancre may be reproduced by a new inoculation, by another infection, syphilis may also occur the second time. I have already stated, that such instances are regarded as relapses, and I have proved that such an opinion is a mere hypothesis. Those observers who have carefully watched many cases of syphilis have observed relapses, especially after an attack of blennorrhagia, which are passed in silence by the *unicists*, probably because blennorrhagia is not regarded as syphilitic. Thus, an individual may have repeated attacks of syphilis, especially of the milder forms. This may be explained by the fact of an incomplete saturation of the system; it is said, that the first infection, being of short duration, still left the system time to become susceptible to the diathesis; the second infection is explained by the greater power of the new virus which has been inoculated, and by the larger quantity taken into the system. It matters not, the fact remains, and the syphilitic *unicity*, which is but an hypothesis, vanishes. Neither the treatment nor the prophylaxis based upon it, can have any foundation, any future.

SECTION VII.

THERAPEUTICS.

The treatment of syphilis may be prophylactic or curative. I shall consider the latter only, the former having formed the subject

of a separate chapter. On the appearance of what has been called the epidemic of the fifteenth century, practitioners viewing it as a new disease, with zeal and anxiety endeavored to find a means of combatting and arresting the scourge. They resorted to all the powerful therapeutic agents then in use. Analogy soon led to the employment of mercury, as for a long time this metal had triumphed over certain very obstinate cutaneous diseases; now, as syphilis often appeared as a disease of the skin, they were naturally led to try mercury; the results were so satisfactory, and so well sustained, that this metal obtained, and still retains, a sway that cannot be seriously contested. I shall therefore enter upon the therapeutics of this disease, by first considering this powerful agent.

I.—MERCURY.

Mercury was first administered externally, and afterwards internally.

EXTERNAL EMPLOYMENT.

This metal has been combined with resins and with fatty substances; it also enters into the composition of ointments and *pommades*. In this latter form, and by frictions, mercury is most frequently employed externally, and next to these in the form of vapor.

Mercurial Frictions.—1. *Ordinary Method.*—These are made with the double mercurial ointment, called the *napolitain*, which, however, is not an ointment but a mixture of equal parts of lard and mercury.

When frictions were first used, their employment was always preceded by a cathartic and blood-letting. The latter may evidently be of service when the patient is young and of good constitution; but it might be injurious in cases where the patient has already become enfeebled, or where he is naturally feeble. As to the cathartic, its use may be generalized with less inconvenience.

To derive success from frictions the skin should be previously prepared. There must be either a degree of permeability, or rather of sensibility favorable to the absorption of mercury. For this purpose hot baths and diluent drinks are useful, and their employment is also indicated during the whole course of the treatment. Five or six baths ordinarily suffice for the preparation, and even if it be difficult to procure them, we may, in simple cases, defer their use to the moment when we commence the administration of mercury. The bath should generally last for an hour, and should be of a temperature nearly equal to that of the body. In individuals whose skin is naturally too dry we promote the good effects of the bath by rubbing, immediately afterwards, the whole surface of the body with the naked hands or a piece of flannel immersed in the oil of almonds, or other analogous oils.

Feeble subjects, already exhausted by syphilis or some other protracted malady, should not bathe so frequently as robust subjects. With such persons we may even abstain entirely during

the preparatory treatment; and after the first frictions have been applied, the practitioner can judge according to the strength of the patient, whether one or two baths may not prove advantageous.

Cold baths have also been prescribed during the preparatory treatment. They are adapted only to individuals not very robust, the state of whose strength seems to require it, and they should be used only during the hot season. Then they produce a tonic effect, whilst at any other period of the year they would only add to the debility of these same patients. If, during the treatment by frictions, the bath cannot be employed, we should substitute for them frequent lotions of soap and water. According to M. Lagneau, during these preparatory measures we must prescribe, as it is called, a soothing and humid regimen; the patient should take only of such aliments as are of easy digestion, such as white meats, aqueous vegetables, and stewed fruits; wine, the company of females, and violent exercises, should be avoided. I approve of the latter measures, but I am not of the opinion that it is necessary in all cases to follow the regimen prescribed by M. Lagneau. Certain patients, on the contrary, require the use of tonics, for mercury produces great debility.

Mercury, in every form, should be proscribed, when the venereal accidents are complicated with acute inflammation, and particularly when this condition which is observed almost exclusively in cases of recent infection depends upon the age and vigor of the subject. Before we resort to the use of frictions, the pain and irritation should be subdued by means of diet, repose, baths, and antiphlogistics, both local and general.

When the patient is once prepared, we should commence with the frictions. The first day, which at the latest should be the second after the administration of the purgative, we prescribe a bath in the morning, and in the evening we should employ friction on one of the legs, from the internal malleolus and sole of the foot to the knee. A drachm of mercurial ointment should be used, and the friction should be continued from twenty minutes to half an hour. On the third day, another bath of longer or shorter duration, or lotions according to the strength of the patient. The friction should now be made on the corresponding thigh, from the knee to near the scrotum; on the sixth day, it should be made on the fore-arm; on the eighth, on the arm; and on the following days the frictions are repeated on the opposite extremity, commencing in the same manner, and following the same course, but constantly on one of the two days, and on the internal face of the thighs, where absorbent vessels exist in great numbers. The patients should cover these parts, after the frictions have been made, with thread stockings, linen drawers and waistcoat, which should be worn day and night, so as not to lose a part of the ointment on the clothes, which besides become so soiled that it is difficult to remove the stains.

During the winter, in cold and humid countries, the parts on which the ointment has been rubbed should be covered with flan-

nels, especially if the patients are compelled to be much exposed whilst engaged in their avocations.

As to the baths, during the course of the treatment, they should be repeated more particularly when the patient is of a dry and bilious temperament, or very irritable, or when the nature of the symptoms require it, on the same days that we employ the frictions. Towards the end of the treatment, they should be used only once in three or four days. For the sake of cleanliness, the parts on which the ointment has dried, should be washed with soap and water. Patients who by debility or other causes are prevented from using the bath, should also wash their skin each time, with the soap and water. The treatment may, perhaps, be compromised by causing the frictions to be too rudely made, and thus at once inflame the parts subjected to the operation, irritate the skin, and retard the complete introduction of the mercury into the system. Frictions should therefore be used with gentleness and care. At the fifth or sixth application, the quantity of ointment employed should be doubled, being therefore two drachms; we have, at this time, but little reason to apprehend a salivation, which does not occur until after the eighth or twelfth day. During the days that the friction is applied, the baths and lotions should be continued, and at other times the patient should be permitted to rest. In the meantime, a diluent or sudorific *tisane* may be given, according as we have to treat a primitive or consecutive affection, and the external symptoms should be treated as the case requires.

The success of the antisyphilitic treatment does not absolutely depend upon the application of the frictions in the order which I have indicated. The result will be the same if, to please the patient, the mercury be applied to the inferior extremities, and even to the legs exclusively, being careful, however, not to apply it twice to the same part, in order not to irritate the skin. When the strength permits, it is better that the patient himself make the application. Should he be too feeble for this purpose, it may be made by an assistant whose hand should be covered with a thin glove or a bladder, that it may not absorb a portion of the medicine. In cases of excessive corpulence, an assistant will also be required. Patients may continue their occupations, and take their walks during the treatment; for moderate exercise, by promoting perspiration, prevents the mercury from acting too much upon the mouth. But changes of temperature, cold, and especially cold combined with dampness, should be avoided. Thus, patients should exercise in the open air when the sun shines brightest, and not during the close of day or during the coldness of night.

Those who strictly follow the rules prescribed, may expect a speedy cure. It must not, however, be supposed that a radical cure has been effected from the fact that the external symptoms have been removed. Daily experience teaches us that notwithstanding the occasional very prompt disappearance of these traces of infection, to destroy completely the syphilitic diathesis, the mercurial frictions must be continued for about twenty or thirty days

in cases of recent infection, and for a much longer period when they are of long standing. This is the opinion of our predecessors, as expressed by M. Lagneau. According to this practitioner, the ordinary quantity of mercurial ointment required to cure a recent case of syphilis, is not far from four to five ounces. To overcome obstinate and troublesome symptoms, this quantity may be raised to from six to eight ounces. Instances have occurred in which even two pounds have been used in a single case.

2d. *Method of Pihorel.*—After the usual preliminary treatment, Pihorel applies frictions to the soles of the feet, the palms of the hands, the internal surface of the thighs, or the arms and wrists, with the following ointment:

℞. Ungt. Napolitain, ℥ iii.
Sulph. Calc. Ammon. ʒ i.

Mix thoroughly. Use at first half a drachm, morning and evening; the dose should be increased to two ounces for each application. The parts are to be previously washed; cover them, after the ointment has been applied, with mittens, stockings, or gloves, which should be worn for two or three hours.

Besides the other advantages of this method, it is claimed that it does not soil the patient's linen, because the sulph. calc. ammon. causes the ointment of Pihorel to unite readily with the soap and water.

The inconveniences attending the method of treatment by frictions, its want of cleanliness, and the difficulty of appreciating the quantity of the metal absorbed, have led to the adoption of other means, of which I proceed to give a detailed account.

3d. *Method of Peyrile.*—The accessory measures are here omitted. The frictions are confined to the mucous lining of the glans and the prepuce. The penis is bathed before the ointment is applied. Frictions are made with two fingers, and continued for fifteen minutes, twice a day; a drachm of ointment is used. After three or four days, symptoms of salivation appear. The frictions are then to be omitted, and not to be resumed until after the expiration of forty-eight hours. The quantity of ointment is increased till a drachm is employed in the morning, and the same quantity in the evening, that is, double that used at first. According to Peyrile, twelve days suffice for recent affections, and twenty-five for those of long standing, the cure being thus made certain! It occasionally happens that these frictions irritate the glans, and cause it to become tumefied, thus causing the patient considerable anxiety. He should be informed of the probability of such an occurrence. Warm local baths, and the discontinuance of the mercury for twenty-four hours, are sufficient to restore the parts to their normal state.

4th. *Method of Scatigna.*—This is called the *mercurial treatment by application.* From fifteen grains to one drachm of ointment is applied to each axilla, and the naked arms are brought against the trunk. This is repeated every second day; in the evening the

patient lies down well covered, and thus remains until the following morning. So active is the absorption, that nothing remains in the axilla.

This application is less filthy than that by the ordinary mode of friction. The exact quantity of mercury absorbed may be known; but in certain subjects it irritates the axilla, the internal surface of the arms, the side of the chest, producing a papular erysipelatous eruption.

5th. *Method of Cirillo.*—He employs frictions with an ointment of bi-chloride of mercury mixed with lard, according to the following formula:

℞. Hydrarg. Bi-chlor, ʒ i.
Axung. ℥ i.

Triturate in a glass mortar for twelve hours, and add:

Hydro-chlor Ammon. ʒ i.

The preliminary measures are baths, lavements, decoctions of dog's-grass, and sarsaparilla.

A drachm of the above ointment is rubbed on the soles of the feet, the application to be made in the evening only. This part is selected because other portions of the skin might become irritated, and even excoriated by the medicine. These frictions are repeated every second day. On the fourth day, a bath is administered, and on the following day one and a half drachms are to be used. This course is to be pursued until the cure is completed, with diluent drinks and a bath every third or fourth day. The quantity of ointment employed should never exceed two drachms at once.

6th. *Method of Clare.*—It is proposed by the English surgeon to produce absorption of the calomel by the mucous membrane of the mouth. Half a grain or a grain of calomel is rubbed on the internal surface of the mouth, in the vicinity of Steno's duct, two or three times in a day. But, as the calomel may thus be swallowed, Clare rubs it on the gums and internal surface of the lips, directing the patient not to spit or to swallow the saliva until the powder has been completely absorbed. The patient must also be careful to take no drink for half an hour. In serious cases, Clare employs as a supplementary application, an equal number of frictions on the tongue, calomel in all cases being used, even in the dressing of the ulcers in the mouth and on the genital organs. Clare aims at a salivation, and as, by his method, this is speedily produced, and sometimes with beneficial effects on the external symptoms, he imagines that he has thus effected numerous and speedy cures, which, in the majority of cases, could have been but temporary. That Clare himself has observed relapses, is proved by the fact that in cases especially of confirmed syphilis, we find that he *generally* uses the *corrosive sublimate.*

This method was not well received in France, and is not here much employed, for whatever may be the precautions taken, a part of the powder is either swallowed or rejected with the saliva.

The quantity absorbed, therefore, cannot be correctly estimated, as salivation occurs most frequently and quickly, and especially as the results obtained by those who have imitated Clare, are far from corresponding with those proclaimed by the inventor himself. M. Brachet has vainly attempted to revive in France the method of Clare, by employing a modification of it, which consists in placing the calomel or the mercurial salt on the end of the tongue, and with the latter organ frictions are made against the palatine arch.

Lotions and Mercurial Baths.—The use of corrosive sublimate lotions is a very old practice; they were employed as dressings to certain primary ulcerations. Mathiole afterwards, with a view of acting not only locally, but upon the whole system, bathed the surface of the whole body with a lotion composed of two ounces of corrosive sublimate to six pounds of water, distilled with plantain, roses, and solanum. This treatment was proposed both for the primitive and the consecutive accidents. But as cutaneous absorption varies greatly in different subjects, and even in the same individual, under different circumstances; as the integuments sometimes inflame, and thus become painful (for the proportion of the sublimate is large), these lotions have been renounced.

M. Meyrieu would substitute for these lotions frictions, with two and a half drachms of a solution, composed of half a drachm of corrosive sublimate, two ounces of water, and half a drachm of alcohol. These frictions are made in succession to the soles of the feet, the legs and the thighs.

The sublimate solution is now used externally only under the forms of baths.

BI-CHLORIDE BATH.

℞. Hydrarg. Bi-chlor. ʒ ii.

Dissolve in a small quantity of distilled water mixed with alcohol, and pour into a sufficient quantity of common water for a general bath. When intended for a child the quantity of sublimate should not exceed one drachm, and in the adult not more than two ounces.

Fumigations.—This is certainly one of the most ancient methods of administering mercury: for certain cutaneous affections were thus treated long before the so-called epidemic of the fifteenth century.

Mercurial fumigations have at times been highly extolled, then neglected, but never completely abandoned, since, even at the present day, they are still used in certain obstinate affections of the throat, nasal fossæ, and syphilitic accidents which have resisted every other method of treatment.

The red sulphuret of mercury (*cinnabar*) was at first, and is still for this purpose employed. Calomel, mixed with the protoxide of mercury, has been occasionally substituted for it. Calomel with albumen, the metallic mercury united with the chloride of iron, and, finally, mercury alone and its red oxide mixed with inert substances, have all been tried.

As the fumigations are generally employed in cases of long standing, it is well to unite with them sudorifics. From the time of Glauber and Lalouette, a large box has been used in which the patient may receive the mercurial vapor, without being forced to respire it, as was the ancient custom. This box is the same as that perfected and rendered useful by MM. Galès and d'Arcet, for the treatment of the itch and other cutaneous affections.

There are no fixed and positive rules for the administration of mercurial fumigations, for the nature, the severity of the case, and the temperament of the patient, may compel the practitioner to vary daily the application of this method. However, it is very common to employ the fumigation every other day. Sometimes they are used two days in succession, and the patient is allowed to rest on the third. Occasionally he is suffered to rest for forty-eight hours.

Two drachms of one of the powders which I shall soon mention, are generally employed. In moderately-severe cases, from twenty to twenty-five fumigations are used, but in severe cases, the number reaches as high as thirty, forty, and even higher.

I have already stated how fumigations are generally administered; the patient being placed in a large box. When we wish to act locally, we make use of a funnel to direct the vapor, or the shower-bathing apparatus to be found in a multitude of establishments in Paris. The extremity of the tube conducting the vapor is directed on an exostosis, on the genital organs, to the throat and nasal fossa, in the case of obstinate ulcerations. Of course, in order to reach cavities, the calibre of the tube must be diminished, and we must proceed gently, with small quantities of the mercurial preparation. As the saline powders possess a great degree of activity, the gray oxide of mercury should be preferred.

[Mr. Langston Parker is doubtless the warmest partisan of this mode of treatment, and, so extensive has been his experience, that his remarks are entitled to the greatest consideration. Its advantages, he states, are, that in ordinary cases, it requires no confinement; never impairs the appetite; does not produce salivation, or ulceration of the mouth, mercurial erythismus or blotches on the skin; and, if associated with internal treatment by mercury, reduces what is required to an exceedingly minute quantity. "In addition to this, treatments according to my plan are safer, quicker, more certain, less frequently followed by relapses, indeed very rarely so, and again are capable of working cures in obstinate cases which have resisted all other modes of treatment." He applies the vapor of the bi-sulphuret, gray oxide, bin-oxide, or iodide of mercury in a moist state, to the whole surface of the body, by which, after the continuance of the process for twenty or thirty minutes, profuse perspiration is induced. This process is repeated as frequently as the nature of the case may require till a cure is effected, and is or is not associated with internal medicines. The patient is placed on a chair, and covered with an oil-cloth, lined with flannel, which is supported by a proper framework. Under the chair are placed a copper-bath containing water, and a metal

plate, on which is put from one to three drachms of the bi-sulphuret of mercury, or the same quantity of the gray oxide, or the bin-oxide. Under each of these is a spirit lamp. Heated air, common steam, and the vapor of mercury, are thus applied to the whole surface of the body in a moist state. At the end of twenty or thirty minutes, the lamps are removed, and the temperature gradually allowed to sink; when the patient has become moderately cool, the coverings are removed, and the body rubbed dry. A cup of warm decoction of guaicum, sweetened with syrup of sarsaparilla, is then administered. The apparatus can be modified to suit particular cases. Mr. P. considers this method vastly superior to that by the dry fumigation. His little volume, "*On the Treatment of Secondary, Constitutional, and Confirmed Syphilis, by a Safe and Successful Method*," we most cordially commend to the attention of those who desire to become acquainted with the true value of mercurial fumigations in the treatment of syphilis. In a recent interview with Mr. P., he informed us that every day's experience strengthened his faith in the efficacy of this plan. Dr. Gibson also speaks highly in praise of this method, and recommends its administration in a manner similar to the above.—G. C. B.]

INTERNAL USE OF MERCURY.

Metallic Mercury—In this state, it has been employed from the earliest period of the mercurial treatment. To divide it, and thus facilitate its administration, the mercury has been united with other substances. A considerable number of formulas have at times been praised, and in turn abandoned. Two remain, and will probably remain in practice: they are those of Belloste and Sedillot.

PILLS OF BELLOSTE (*Modification of Baumés*).

℞.	Quicksilver,	ʒ i.
	Potass. Bi-Tart.	ʒ i.
	Diagrydium,	ʒ i.
	Jalap,	ʒ i.

Made into pills of three grains each. From two to six to be taken daily.

These pills resemble those of the famous Chéradin-Buberousse, which had so great a reputation; but they are now rarely employed in the anti-syphilitic treatment. They are intended to act chiefly as a purgative. For that purpose from twelve to twenty may be given in the day. I have observed the good effects of these pills in cases of very obstinate mesenteric engorgements.

When we wish to act at once on the syphilitic virus, the following pills are to be preferred:

PILLS OF SEDILLOT.

℞. Ungt. Hydrarg. ʒ iii.
Sapon. Offic. ana ʒ ii.
Pul. Glycyrrh. ʒ i.

Make into pills of from three to five grains, each, of which contains about one grain of the metal. From two to ten are to be taken in the twenty-four hours.

M. Rayer, who highly praises Sedillot's pills, makes them according to the following formula:

℞. Ungt. Hydrarg. duplex. gr. xlv.
Sapon. Offic. gr. xxx.
Pulv. Glycyrrh. gr. xv.

Make into pills of three grains. Dose, two for a female, three for a male, during the day.

Instead of taking the ordinary mercurial ointment, the metal is mixed with the butter of cocoa, and the pills thus made are very much employed:

℞. Ungt. Hydrarg. with butter of cocoa recently prepared, ʒ ii.
Sacch. Pulv. ʒ ii.
Muc. Gum Arab. q. s. ft.

Forty-four pills, of which from three to twelve may be taken in the twenty-four hours.

MERCURIAL COMPOUNDS.

Metallic mercury, as we have seen, must be administered in very large doses to produce the desired effects, and this is an inconvenience; it has therefore been combined with other substances, and thus been rendered much more active, whilst it may be administered in much smaller quantities.

The Chlorides of Mercury.—These are among the combinations most employed, especially the bi-chloride.

1st. *Proto-chloride.*—The proto-chloride, or calomel, which was formerly so much employed, and is now but seldom used in the treatment of affections really syphilitic. Being insoluble, to produce curative effects, it must be administered in very large doses, and then it too frequently and too speedily produces salivation, and acts too powerfully on the intestinal canal; it is used as a purgative much more frequently than an anti-syphilitic. The following formula is still retained in the anti-syphilitic therapeutics, because it is less apt to excite ptyalism than the others:

℞. Hydrarg. Proto-chlor. gr. iv.
Opii. gr. ii.
Extr. Glychirr. moll. ʒ i.

2d. *Bi-chloride of Mercury, or Corrosive Sublimate.*—This preparation was long since known, when Rich, Wiseman, Hoffman, and Boerhaave recommended it as an anti-syphilitic. Its use was much more efficacious and more extensive when Van Swieten regulated its mode of administration after the practice of Boerhaave. The following is the formula for the famous liquor which still bears the name of Van Swieten. I copy it from the last *Codex*:

VAN SWIETEN'S LIQUOR.

℞.	Bi-chlorid. Hydrarg.	1 pt.
	Aq. pur.	900 pts.
	Alcohol rect.	100 pts.

This compound contains the one-thousandth part of corrosive sublimate. It is administered at first in the dose of a tablespoonful in a glass of sugared water, milk, or gruel, which destroys the metallic taste of the liquor, which is more or less decomposed.

M. Puche prefers the following solution:

CHLORO-MERCURIAL SOLUTION.

℞.	Bi-chlor. Hydrarg.	gr. xv.
	Sal. Marin.	℥ i.
	Aq. dist.	℥ xvi.

To be used in all cases of constitutional syphilis, in doses of from one to one and a half ounces in the day; let the patient drink half a pound of some sudorific tisane, at four different doses, after regular intervals.

To obviate the disagreeable taste of the solutions of the bi-chloride, and to disguise the medicine, it is now made into pills. Various formulæ are used. The following is the one which was preferred by Cullerier and Dupuytren:

CULLERIER'S MERCURIAL PILL.

℞.	Bi-chlor. Hydrarg.	gr. xv.
	Farin. Trit. Hyb.	℥ ss.
	Gum pulv.	℥ ss.
	Aq. dist. q. s. ft.	

Pills of two and a half grains each. Dose, two morning and evening.

In describing the treatment of chancre I have already mentioned the formula which I prefer; it nearly resembles that of Dupuytren. My formula contains the fifth part of a grain of the sublimate. That of the illustrious surgeon just named was as follows:

DUPUYTREN'S PILLS.

℞.	Bi-chlor. Hydrarg.	$\frac{1}{16}$ to $\frac{1}{4}$ grain.
	Ext. Opi. Gum,	$\frac{1}{4}$ or $\frac{1}{2}$ grain.
	Ext. Guaic.	grs. 4.

Make one pill. Dose, two in the day.

I have already stated that I employ the bi-chloride in cases of primary affections only. In confirmed cases of syphilis I adopt the following means:

Combinations of Iodine and Mercury.—These were introduced by Biett. They are therefore new agents, and yet they have already attained a reputation surpassing that of the bi-chloride of mercury. There can be no doubt, as has been proved, especially by M. Cazenave, that the syphilitic eruptions are beneficially modified by the compounds of iodine and mercury, and this, too, after the bi-chloride has failed.

Biett tried at first the bin-iodide; he united it with the expressed juice of the lactuca sativa (thridace). But its great activity and difficulty of management caused the proto-iodide to be preferred by Biett and his pupils.

M. Puche has returned to the bin-iodide; he combines it with iodide of potassium, as follows:

M. PUCHE'S SOLUTION OF IODINE AND MERCURY.

℞.	Bichlor. Hydrarg.	gr. viii.
	Iodid, Potass.	gr. viii.
	Tinc. Saffron,	℥ i.
	Aq. pur,	℥ xvi.

From one to four ounces a day in a sudorific tisane.

M. Puche employs this solution in cases of indurated chancres to prevent constitutional infection; and especially in the treatment of the tardy secondary accidents.

The following pills may be substituted for the solution:

M. PUCHE'S PILLS OF IODINE AND MERCURY.

℞.	Bichlor. Hydrarg.	grs. viii.
	Iodid, Potass.	grs. viii.
	Amyl.	ʒ iss.
	Gum Arab.	ʒ ss.
	Aq. q. s. ft.	

Pills fifty. They should be covered with gelatine to protect the fauces from their irritating effects. Dose, from two to ten in the day.

The above formulæ are copied from the notes of M. Puche himself. The proto-iodide, however, is the preparation preferred by the great majority of practitioners. M. Cazenave, for example, gives it in doses of from one to three grains in the day. In the milder forms of the syphilida, and in subjects somewhat irritable, he uses the following:

℞.	Prot. Iod. Hydrarg.	grs. viii.
	Thridace	℥ v.

Make twenty pills. One to be given at first, then from two to four in twenty-four hours.

In the severer forms, as for example the tubercular, this is the formula adopted by M. Cazenave:

℞. Proto-iod. Hydrarg. ʒ ss.
Thridace, ʒ i.

Make forty pills. Dose, one at first, then from two to four in the twenty-four hours.

This is the quantity most generally administered by M. Ricord in all cases of secondary affections. He makes fifty pills with forty-five grains of the proto-iodide, and the same quantity of the thridaces, and a certain quantity of opium and conserve of roses.

As I am satisfied that the interruptions of the mercurial treatment are injurious, and as large doses of the proto-iodide act promptly on the mouth, and the intestinal canal, I gradually accustom the system to the influence of this medicine. I adopt the following formula:

AUTHOR'S FORMULA.

℞. Proto-iod. Hydrarg. gr. xv.
Thridace, gr. xv.
Conserv. Ros. q. s. ft. pill 30.

One to be taken morning and evening. Occasionally I have given but one in the day. Gradually the dose is increased, so that instead of thirty I make but twenty-five pills; then twenty containing fifteen grains of the proto-iodide. In subjects with a very irritable intestinal canal, especially females, for the thridace I substitute four grains of the gummy extract of opium.

Cyanuret of Mercury.—Biett and Parent-Duchatelet have praised this salt. The latter has even made experiments for the purpose of determining the practical value of the new anti-syphilitic agent. He commences by giving $\frac{1}{16}$ of a grain, at the onset of the attack; then it is increased to $\frac{1}{12}$ $\frac{1}{8}$ of a grain, and even to $\frac{1}{2}$ a grain. Parent makes tinctures of the cyanuret, also pills, solutions, gargles, and pommades. According to Parent and others who proclaim the praises of the cyanuret of mercury, this compound has the following advantages: 1st, it does not produce the pains in the epigastric region, which is partly attributed to the salts of mercury; 2d, it is less easily decomposed than the bi-chloride; 3d, being more soluble than the latter salt, its action should be more prompt, and hence its more rapid cures. It would seem that these and other advantages have not given to the cyanurets of mercury a precedence over the bin-iodide and the proto-iodide, which are still most frequently employed. True, as I have already stated, the cyanuret was introduced at a later period, and experience has not yet fully decided on its virtues. The following are Parent-Duchatelet's pills:

PILLS OF CYANURET OF MERCURY.

℞.	Bycyanid. Hydrarg.	gr. v.
	Opi. crud.	gr. xii.
	Mic. pan.	ʒ i.
	Mel. q. s. ft. pil. 96.	

Each pill contains $\frac{1}{16}$ *grain of the cyanuret, and* $\frac{1}{8}$ *grain of opium. I have already mentioned the dose of the cyanuret administered by Parent.*

II.—OTHER MERCURIAL PREPARATIONS.

The *acetate of the deutoxide of mercury*, which forms the base of Heyser's pills, has also been employed. *The proto-tartrate of mercury* has been highly recommended by Pressarin, a surgeon of Lyons; it forms a liquid called the *vegeto-mercurial water.* It is known that the *proto-nitrate* and the *acetate of mercury* constitute the active part of the syrup of Bellet, so highly praised by Bouvart, and which exists only in name on some labels. Finally, we have also the *deuto-nitrate*, and then the *proto-phosphate of mercury.* All of these compounds, the offspring of industrious minds, or the desire of doing something when nothing better could be done, have now fallen into that oblivion which they merited.

III.—ACCIDENTS PRODUCED BY MERCURY.

The introduction of a certain quantity of mercury into the system occasionally produces accidents which it is important to understand, that they may be avoided and combatted; at the head of these must be placed salivation or stomatitis, after which may be placed *mercurial tremors.*

SALIVATION AND STOMATITIS.

This accident has been observed from the most remote periods, when mercury was employed in the treatment of certain cutaneous affections. Thus, Avicenna prescribed the gargles which should be employed. The attention of our predecessors was more particularly arrested by the more or less considerable flow of saliva, and this phenomenon was attributed to the action of the mercury on the salivary glands, or other secretory organs. At the present day, it is supposed to be the result of an inflammation of the gums and living membrane of the mouth; the action on the salivary glands is completely denied, though without cause.

Salivation is much less common now than in former times, as we endeavor to avoid it, regarding it as an accident, whilst our predecessors provoked it with large doses of mercury, or by the method of its administration, believing it to be a favorable crisis in the treatment of venereal diseases. However this may be, it is important to be acquainted with this accident, both on account of its prophylaxis, and its therapeutics properly so called.

Causes.—Children under seven years of age are very seldom

salivated. During the period of the first dentition, indeed, mercury acts rather on the digestive organs than on the mouth. Certain temperaments and morbid conditions predispose in an especial manner to ptyalism; thus the lymphatic, the strumous, and scorbutic, or the latter alone. Certain states of the intestinal canal, of the mouth, predispose to ptyalism; as for example, habitual constipation, and especially neglected carious teeth. Salivation is observed more frequently in females than in males. In females the mercury more frequently acts on the intestinal canal, which has led to the assertion that females do not well tolerate the use of the medicine.

Certain modifications of the integument, especially sudden changes, may produce salivation. Thus the sudden exposure to the action of cold and moisture, by checking perspiration, promote the development of ptyalism, for this reason it occurs less frequently in summer than in winter. This should teach us to protect the patient from the effects of cold during the administration of mercury. But it has also been observed, that a high temperature may produce the same result. This is especially the case with artificial heat; thus, when it was the custom to confine patients after the use of frictions, in small and heated rooms, patients who passed their days over heated stoves were most generally salivated; a fact explained by the determination to the head under such circumstances. Whatever opinions may be entertained with reference to the action of heat or cold, the practitioner should guard the patient from the excesses of either.

Vain attempts have been made to combine mercury with the substances which should so modify its action as to prevent salivation. For this purpose it has been united with sulphur, camphor, &c.; but the mouth under certain circumstances and in certain doses, always becomes affected. This arises from the fact, that the special action on the mouth does not depend upon this or that mode of preparation, since whatever the latter may be, when once introduced into the system, its effect on the constitution and the mouth is the same; for all mercurial compounds undergo a change which reduces them to a single form. Such at least was the opinion of Hunter, and M. Mialhe has lately proved that every mercurial compound, when introduced into the stomach, becomes changed into the bi-chloride of mercury. Thus the effect depends not upon the particular preparation, but on the quantity of mercury taken into the system. We can therefore understand how the preparations and applications which permit the speedy and abundant absorption of the metal, without immediate unpleasant consequences, will most frequently produce salivation; the compounds on the contrary, whose local effect is powerful, will more rarely excite ptyalism, for the reason that the quantity used is necessarily moderate. From this it follows that mercurial frictions, the local action of which is unimportant, and which enables us to introduce a large quantity of mercury into the system in a short space of time, are speedily followed by salivation; the same result attends the internal administration of the insoluble salts, as, for example,

the proto-chloride of mercury. The bi-chloride and the bycyanide of mercury very seldom produce ptyalism, because the corrosive action compels the practitioner to administer them in very small doses. Thus, salivation depends upon the quantity used within a given time, and not upon the form in which the metal is administered. Of course this quantity depends also upon the individual, for some are salivated after two applications of the frictions, whilst others are never so affected. I have already remarked that children under seven years of age do not become salivated.

Symptoms and Progress.—From what I have stated, it is evident that the commencement of salivation varies according to the quantity of mercury at first administered. Thus, when the employment of frictions was almost general, ptyalism was often observed on the fourth day. At the present time, with the proto-iodide for example, in doses of one and a half grains, and this quantity not exceeded, salivation generally occurs during the course of the first week. Each increase of the quantity increases the probability of ptyalism; thus patients have been seen to tolerate well the ordinary dose of the proto-iodide for eight or fifteen days, and yet whenever one grain was added to the the above quantity the mouth would become affected. But if we proceed more cautiously, if instead of increasing the dose one grain, we add fractions of a grain, the dose may be increased to three grains daily without causing the mouth to suffer

I proceed to examine the symptoms beginning with the mildest, or those included in the *first degree.* At first there is redness and tumefaction of the gums; they are very painful especially on pressure; they are soft and have a fungous feel; they bleed and separate from the necks of the teeth which are slightly loosened. The gums on the lower jaw are first affected, and generally the mucous membrane behind the wisdom teeth, especially when they are not fully through, or are in the process of cutting; then follow the upper gums, and finally, the cheeks, the edges of the tongue, and the lips become affected. At the points subjected to pressure by the molar teeth, especially at the depressions corresponding to the bodies of the teeth, and on the ridges corresponding to the interspaces between them, the effects may also be discovered. Between the inferior and superior depressions is a very prominent ridge, directed horizontally from before backwards; it arises from the separation made by both jaws, a separation more prominent than natural, which is explained by the swelling of the mucous membrane of the adjacent parts, and the pain which prevents the teeth from coming in contact with each other. The arch and the velum of the palate, its pillars, the tonsils, the uvula, and occasionally the pharynx, become involved in these pathological changes. The glands of the mouth are often enlarged, the tongue is turgid, red and painful on motion, and its edges have the appearance of festoons which are the imprints of the teeth; its papillæ are sometimes more prominent than in the normal state. All the movements of the tongue and the buccal parietes are more or less impeded or rendered impossible, by the swelling of these parts, and

those of the tongue in particular by the tumefaction and the pain. The mouth has a repulsive and peculiar fetor. The patient is annoyed by a constant disagreeable metallic taste. The sub-maxillary glands, in which the lymphatic vessels of the mouth terminate, are engorged. Sometimes the upper part of the neck becomes tumefied; and the lips and cheeks puffed to a considerable extent.

As I have stated, it was once supposed that the salivary glands were the parts primarily and principally affected. At the present day, some authors believe that they are never involved. This opinion is erroneous. Nevertheless, it is very certain that even in the case of inflammation of these glands, its severity does not always correspond with the quantity of fluid secreted. The lymphatic glands are at least as often affected as the salivary glands, which is very seldom, and perhaps never the case unless when the inflammation extends from the lining membrane of the mouth, as may occur in any inflammation of this membrane. These cases of adenitis seldom attain any considerable severity, and very rarely terminate in suppuration. Such a termination is still more rare with the salivary glands.

The quantity of saliva which escapes is sometimes very trifling, particularly in the first degree of the affection; but if the treatment be not gradually suspended in twenty-four hours, the patient may lose much more than would be imagined. Cases have been cited in which as much as eight pounds have been lost in this space of time. The head is flexed, and supported by the hand, the lips swollen, the tongue tending to protrude from the mouth, and the latter is open to permit the saliva to escape.

Fallopius asserted that the saliva thus discharged, contained mercury in solution. M. Colson has again advanced the opinion, that we may assure ourselves of the presence of the metal by plunging into the saliva a blade of gold or of copper. Chemists, such as Christison, Rhodes, Meisner, and Bostock, who have repeated this experiment and employed proceedings the most delicate and varied, have constantly arrived at negative results. According to Bostock, the most remarkable character of the saliva in syphilitic patients, that is, in those who have been subjected to mercurial treatment, consists in the very great diminution in the proportion of the mucus. The saliva is rather serous than mucous. Indeed, this fluid in ptyalism is secreted in too great an abundance to be completely elaborated; the same condition obtains with all the secretions.

I have thus described the symptoms in their highest intensity, of the first degree of stomatitis. In the *second degree*, these symptoms in becoming developed, impress a new character on the disease which now presents another aspect. Bright red patches appear at every point of the buccal mucous membrane in contact with the teeth. But the peculiar characteristics are diphtheritic productions, a kind of plastering which is seen on the free border of the gums, and the upper surface of the tongue; these pseudo-membranous formations are also to be seen on the internal surface

of the lips, cheeks, on the sides of the tongue, precisely at the points which correspond to the dental arches.

When the symptoms reach the *third degree*, the diphtheritic formations disappear, and in their place are found ulcerations and loss of substance of the mucous membrane.

The *fourth degree* is characterized by a more considerable loosening of the teeth, which sometimes drop out; for the inflammation of the mucous membrane, which in the *first degree* was confined to the internal layer of the dental follicle which is in connection with, and adheres to the neck of the teeth, now involves the periosteal lining of the sockets of the teeth; thence the separation of the surfaces which it covers, that is the teeth and alveoli; and thence the loosening and loss of the former and the necrosis of the latter. The action of the mercury may be such upon the mouth, that the gums, the tongue, and the cheeks, sometimes mortify. These cases are excessively rare, for this blind and obstinate administration of mercury, when the mouth is already affected, is not a characteristic of our day.

The cases are exceptional in which we observe a fever somewhat peculiar during the course of a salivation. In some cases, the pulse becomes a little frequent and the skin hot; there are cephalalgia, sleeplessness, general prostration, and anorexia. Occasionally there is considerable discoloration of the tissues, the face, especially, being very pale; the patients become emaciated, diarrhœa and tremors supervene, with or without paralysis; but these are complications which are very seldom observed at first, and only when we persist in administering mercury, notwithstanding the existence of the stomatitis.

It is rare that stomatitis passes through the *three degrees*, which, for the purpose of facilitating their study, I have described. At the present day it is almost always partial, and confined to one point of the gums, or of the buccal mucous membrane, and it lasts for some days or weeks.

Diagnosis.—The mercurial are liable to be confounded with the syphilitic ulcerations. I pointed out their differences when speaking of chancre. M. Grappin has established further distinctions in an excellent *Thesis*. He observes:

"The diagnosis of mercurial stomatitis is never difficult; it cannot be confounded with simple stomatitis, and that produced by certain agents, as emetics for example, for it is rare that we are not informed of its cause, and this knowledge suffices; even in the absence of such information, the fetor of the breath, and the loosening of the teeth will soon remove all doubts. It is easy also to distinguish mercurial ulcerations from those produced by the syphilitic virus. Indeed, the first occupy the internal surface of the cheeks, lips, and sides of the tongue, and correspond to the projections of the teeth; the others most generally affect the inner surface or borders of the lips, the commissures, the upper surface of the tongue, as well as its sides, the velum palati, the tonsils, the superior and middle part of the pharynx. These syphilitic ulcers are deep, and circular, with elevated and perpendicular edges;

their base is of a grayish dirty color; the mercurial are superficial, irregular, and covered with whitish membraniform concretions, and are few in number; lastly, the ulceration is always preceded by redness and tumefaction of the mucous membrane, and ptyalism. Add to this the fact, that mercury always aggravates mercurial ulcerations, whilst the syphilitic are advantageously modified by it."*

Prognosis.—This may be regarded in two points of view: 1st, with reference to the local disorders and the effects on the constitution, and independently of the consequences which salivation may produce in the treatment of syphilis; 2d, with reference to this treatment.

A. As to the general and local disorders resulting from the use of mercury, administered as at the present day, it may be said that it is rare, exceedingly rare. Thus it is necessary that we obstinately adhere to the doses and the mode of administration which affect the mouth; and that the patient be placed under unfortunate hygienic conditions, and his constitution be profoundly debilitated, in order that we may observe these mortifications of the cheeks, of the tongue and gums, which leave behind such losses of substance, and deformities, to interfere with the functions of the parts. The general effects are, nervous symptoms and exhaustion, results of a salivation not only abundant, but very prolonged. Now, I repeat, it is rare that practitioners do not prevent these accidents by the moderation of the doses, and the precautions which they take to suspend the administration of mercury when the mouth begins to be affected.

B. As to the second point of view, that is, its bearings upon the treatment of syphilis, the opinion is no longer entertained as formerly, that it is of advantage. It was supposed, indeed, that the virus might be drained away by means of the perspiration, an intestinal flux, and especially by a flow of saliva, and there was a method of treatment called that *by salivation*, which was for a long time followed, and is yet occasionally employed by some practitioners. This is now avoided as much as possible, and the treatment adopted in its place has been denominated that *by extinction.*

All practitioners, however, do not equally dread the occurrence of salivation. Some there are who do not believe that it is injurious, nor do they imagine that it is of advantage; at least their method of administering mercury would go to corroborate this assertion. Thus these practitioners, in the treatment of the syphilida, are not afraid to give the proto-iodide of mercury in doses of three grains and more in the day. They know that it may produce a certain degree of salivation, and as they can arrest it by suspending for awhile the use of the mercury, they administer large doses. But if they suspend the mercury, they arrest the treatment. Now, in my opinion, this is a great inconvenience, and a cause of failure and relapses. This I have already stated. Salivation, therefore, whether voluntarily or involuntarily pro-

* Grappin, *Thèse de Paris*, 1846.

duced, is unfavorable in both the points of view I have indicated, for it may prove injurious by the disorders directly caused by the mercury, and because it compels the practitioner to interrupt a treatment, the success of which greatly depends upon the continued employment of its means. However, there are certain cases, but very rare, which would seem to justify the practitioner in provoking a slight salivation; but then it is for the purpose of combatting accidents which might rapidly compromise organs of great importance; thus I have observed, that in serious cases of syphilitic iritis, we may derive a certain advantage from salivation; it then effects a derivation on the part of the mouth, which promptly relieves the eyes. I shall return to this subject in treating of iritis.

Treatment.—In the first place, salivation is to be avoided, that is to say, we must have a prophylaxis. I have already alluded to the want of success of the combinations of camphor and sulphur with mercury. In describing the method of Pihorel, I showed, also, that the combination of mercury with ammoniated lime, had been unsuccessfully tried in preventing stomatitis. It is better to prepare the patient properly as I have recommended; blood-letting in certain young and vigorous subjects, cathartics and baths in all cases, may singularly promote the tolerance of the mercury. But the best prophylaxis is that based on the knowledge of the causes which I have already described. Sudden changes of temperature, and especially humid cold, must be avoided. The patient, however, should not be closely confined in small and heated rooms. I have stated that the accumulation of patients who have submitted to frictions, in a small ward heated by a stove, was a determining cause of stomatitis. Above all, the use of mercury in large doses should be avoided, for it is the quantity administered, and not its mode of administration, that especially produces salivation. If it be deemed advisable to introduce a large quantity of mercury into the system, we must proceed cautiously at first, in order to establish a kind of tolerance of the medicine. We can only succeed by commencing with small doses, and continuing them for a length of time.

The curative treatment of ptyalism consists in the use of both direct and indirect means. Soothing and astringent gargles constitute the first. Experience confirms the utility of both, but at different stages of the salivation. The soothing, for example, are better adapted to the first period of the irritation. When the inflammation is severe, it is even necessary to add to every six ounces of the gargle, be it of warm milk, barley-water, or of marsh mallow, ten or fifteen drops of laudanum.

Gargles, alone, are insufficient when the stomatitis has become very intense, and we must then resort to local depletion. We may apply from fifteen to twenty leeches below the inferior margin of the lower jaw, between the angle and the chin. While the leech bites are bleeding, it is well to let the patient's feet be immersed in very warm water.* At a later period we may substitute for the emollient applications oxycrate or lumps of ice over the

lower jaw. The patient may likewise introduce fragments of ice into the mouth. These means should be continued whilst the symptoms remain unabated, but when they begin to subside, and the irritation has sensibly diminished, we should resort to the use of astringent gargles, such as plantain water, with a certain proportion of alum, water acidulated with vinegar or a few drops of sulphuric acid, a decoction of roses, of gall-nuts, or of tannin.

The mercurial ulcerations become so indolent towards the termination of ptyalism, that they will not heal, although subjected to the stimulation of the astringent gargles of which we have spoken. They must then be touched with caustics, such as the nitric or sulphuric acids, Lanfranc's collyrium, the sulphate of copper, the *pierre infernale*, and the hydro-chloric acid. The latter acid has already been much employed. It may be applied with a brush to the different seats of ulceration, and thus produce a decided improvement in their condition. The same effect may be obtained with the crayon of nitrate of silver. These caustics may be employed even at the commencement of the disease, in which case they should be applied to the parts of the gums and cheeks primarily affected. Stomatitis may thus be arrested, if not very severe, and especially if at the same time the mercury be discontinued.

A gargle composed of one-eighth part of the chloride of soda has also been used with advantage. But we may meet with patients in whom this application will excite too much irritation; the acrid character which it gives to the gargle, becoming sometimes insupportable. In such cases it is better to use a proportion of one-sixteenth or one-twentieth in some mucilaginous vehicle. Under other circumstances, on the contrary, the atonic condition of the mercurial ulcers may be such as to require the application of the chloride of soda, diluted with but a very small quantity of water.

M. Lagneau has also employed, for the same purpose, lozenges composed of the chloride of soda, gum and sugar, with the addition of some aromatic substance. Sometimes he administers these lozenges with the view only of removing the offensive fetor of the breath in persons who are subjected to mercurial treatment, and who are not yet salivated; he uses them in cases where the breath becomes offensive from other causes.

The internal use of opium has likewise been recommended to relieve salivation, but the experiments made at the venereal hospital with this medicine have not been favorable to its reputation as an anti-sialagogue. On this account, however, opium should not be absolutely rejected in cases of ptyalism. When we wish to diminish great irritation in the mouth, laudanum may be successfully employed.

Hunter had great faith in the efficacy of opium. He has stated that when the effects of mercury are felt in the mouth and pharynx, the application of opiated lotions to these parts is often of advantage. It allays the irritability, and consequently the pain; it also diminishes the secretion. The following formula has been extolled:

No. 1. ℞. Caps. Papav. contus. ℥ ss.
Sem. Lin. ℥ i.
Aq. bull. ℥ vi.
Syr. Mel. ℥ ii.

No. 2. ℞. Decoct. rad. Marsh mallow, ℥ vi.
Laud. of Sydenham. 20 to 30 m.

Whatever may be the *modus operandi* of the direct means employed to arrest salivation, as they can act only temporarily on the local irritation without modifying the cause producing it, we should, according to M. Lagneau, consider them only as accessories to other anti-sialagogues which have a tendency to displace this irritation or to render the mercury incapable of maintaining it by causing it to undergo, if we can believe some authors, new combinations. At the head of these indirect means must be placed cathartics. They transfer the irritation to the intestines, and may thus prevent ptyalism, and their continued use is an excellent curative means, when salivation has been produced. In the latter case it is an established principle that they must be administered much more frequently. Purgatives often promptly arrest the progress of a salivation in the course of five or six days. Sometimes, however, it is not suppressed under from fifteen to twenty days. But even their purgatives are not without their advantage, for they may prevent the aggravation of the buccal irritation, even if they are insufficient to arrest its progress.

It is customary to prescribe an ounce of the sulphate of soda or magnesia, to be taken in three glasses of chicory water, or a bottle of the solution of the citrate of magnesia. M. Lagneau recommends a pill of soap and aloes according to the following formula:

℞. Sapon. Offic. ℥ ii.
Pulv. Rhei. ℥ i.
Aloes. Pulv. (fine) ℥ ss.

Make into pills of one grain each, of which from three to six are to be taken in the day.

Hot baths are frequently employed in cases of salivation. Their efficacy is explained by the cutaneous excitement diverting the vital forces which act too violently on the salivary apparatus, in which case their action may be compared to that of purgatives or other indirect irritants. Foot baths may have the same effect, and may be used with benefit; the latter act especially as derivatives, if to them we add mustard powder or two ounces of hydro-chloric acid. Recourse has also been had to the abstraction of blood by cupping, or to dry cupping, to rubefacients and dry frictions, in order to transfer the irritation to organs remote from the salivary glands. For this purpose even blisters have been used. They are especially useful when the salivation is disposed to continue very obstinate; for it sometimes happens that ordinary means fail, and we are obliged as a last resort to employ those of a severer nature.

Blisters like the cups may be applied to one or both arms; but the nucha of the neck is the place generally selected on account of its proximity to the parts.

Mussa Brassavole, who wrote in 1551, believed that salivation was produced by mercury reaching the mouth in its metallic state. He recommends that the patient should constantly hold in his mouth a piece, or ring, of gold, in order that the mercury may combine with it, and thus lose its sialagogue properties. These experiments have been repeated by the most skilful chemists of our day, but they have never been able to detect a single atom of mercury on the gold.

[The evidence upon this subject, afforded by the carefully-conducted researches of Dr. Samuel Wright, of Birmingham, England, is not without its value, confirming, as it does, the conclusions of Devergie and others, who have failed to detect any portion of mercury in the saliva of those affected with stomatitis. In his lectures on the physiology and pathology of the saliva, published in the London Lancet, Sept. 1842, p. 803, he remarks: "As far as my own experience is concerned, and I have operated largely, and with much patience, I can offer no evidence in favor of the presence of mercury in the saliva of people suffering from mercurial ptyalism. I have employed all the most eligible and delicate processes recommended by Christison, especially the galvanic test and destructive distillation, but not in one instance have I succeeded."—G. C. B.]

The affinity existing between sulphur and mercury having long since been remarked, this simple substance was early recommended for the purpose of arresting the progress of salivation. It is given in substance, in the form of lozenges. Some advantage has been supposed to be derived from this agent notwithstanding our ignorance of its manner of acting on our organs. Perhaps it is a derivative. It may also act as a stimulant to the alimentary canal, and by increasing the activity of the functions of the skin. M. Lagneau, who seems to be an advocate for the use of sulphur, reproaches it as well as other anti-sialagogues, with not constantly fulfilling the expectations of the practitioner, but as its employment is sometimes followed with good effects, he recommends it more strongly, as it is very innocent and does not prevent the simultaneous use of purgatives, of gargles, and other appropriate means. This practitioner has seen sulphur thus administered, three times arrest a ptyalism during the same treatment, in a subject whose mouth became constantly affected by the slightest dose of mercury.

Pearson observed the efficacy of sulphuric acid administered as a beverage, a sufficient quantity being used to give it an agreeable acidity. M. Lagneau, who has used both the mineral and vegetable acids, speaks of it in the highest terms.

I have thus noticed briefly as possible most of the means which have been employed in the treatment of salivation, but I should remark that all are not possessed of the same degree of efficacy. Slight cauterization with hydro-chloric acid or the nitrate of silver, and the use of purgatives, constitute the basis both of the direct

and indirect treatment. The other means are accessory, with the exception of local or general depletion in young and plethoric subjects, and when there is manifest congestion of the mouth. It should be well understood that first of all, the administration of mercury is to be suspended.

Cholic and Diarrhœa.—Mercurial Tremor.—At the present day perhaps mercury produces more frequently morbid effects upon the intestinal canal, than it does salivation, for it is almost always administered internally.

Diarrhœa, and especially cholic, occur in certain patients after every dose of mercury, and continue during the day and following night. This accident is more frequent in females, and is much more frequently observed after the administration of the proto-iodide, than the bi-chloride of mercury, either because the latter is administered in smaller doses, or perhaps on account of its more frequent combination with opium; for the formula of Dupuytren is very much used. It is especially in cases where the mercury is thus administered that we observe constipation. It is not very rare, indeed, that hospital patients who are treated for primary accidents, with the pill of Dupuytren are thus affected. But this is an inconvenience of much less importance than diarrhœa and cholic; in the latter case the mercury should be either discontinued or its dose so diminished as no longer to produce abdominal trouble. In all cases it is better to combine it with opium.

Mercurial tremors I believe to be very rare. I have observed them but in three instances, once in a gilder, and once in a patient who for a long time had made use of frictions. There is at present in my service a patient in whom this accident has followed the administration of mercury in baths. As facts of this kind are rare, and as the cases are generally wanting in details, the circumstances connected with this case besides seeming to possess a real interest, I here insert the particulars which I have been able to collect in regard to this patient.

L. (Alf.) æt. 19. Admitted March 15th, 1852, into Ward 9, No. 1. He has several times been affected with blennorrhagia. The last attack was in 1848. The treatment prescribed was very irregularly followed. The patient suffered but little; the inguinal glands were indolent. During the latter part of 1849 (L. was in the hospital of Dijon) the discharge ceased at the moment of the appearance of a cutaneous affection, which the practitioner regarded as psoriasis. The patient made use of corrosive sublimate baths for three weeks, one every day. The quantity used in each bath is unknown.

After the tenth bath, L. felt slight pains, accompanied with muscular contractions, especially in the arms. Soon a little tremor followed, which was but of short duration. The patient lost his appetite and suffered constant cephalalgia, with profuse perspiration. There was constipation as well as considerable debility, without much emaciation.

During the twenty-second bath, L. had violent attacks with foaming at the mouth, and was insensible for two hours. There

was convulsive rigidity of the extremities. With returning consciousness, he was seized with a general tremor so violent as to render walking very difficult. Five or six days afterwards, the patient's condition began to improve, and in the course of three weeks, the legs and arms alone remained affected with the tremors. He then left the hospital at Dijon. His disease diminished under the influence of simple baths; the tremors became intermittent; he rarely, however, passed an entire day without an attack, having from one to twenty during the day. (Their duration was generally from three to ten minutes.) Stimulating drinks, and strong mental emotions, exerted an influence in producing their attacks. The baths of corrosive sublimate effected no change in the condition of the cutaneous affection, which was not cured until two months afterwards.

Notwithstanding this affection of the nervous system, the patient indulged in sexual intercourse, and contracted a chancre, for which he came under our care. This chancre, of a serpiginous form, was very painful; he had also intense cephalalgia. The tremor, confined to the limbs, diminished under the influence of baths and mild purgatives. Of course I refrained as much as possible from the use of mercury when I commenced the general treatment. The above is an example of epileptiform mercurial tremors.

As to the morbid affections of the skin and the kidneys, described in some books as the results of mercurial treatment, I am not aware that such have been carefully observed, and if they really deserve to be called accidents. If the reader have noted our remarks upon the morbid effects of mercury, he will have become convinced that this medicine produces those of a grave character only when it has been improperly administered. By avoiding those proceedings which suddenly introduce into the system too large a quantity, as, for example, frictions, and by moderating the doses for internal use, we may almost always prevent, not only the slight inconveniences of the mercurial treatment, but the morbid effects which may be regarded as the accidents of this treatment.

In conclusion, briefly, we would state, that the bi-chloride in small doses for the *primitive* accidents, the proto-iodide in little larger doses for the *secondary* accidents, are the two forms under which mercury renders most service in practice.

IV.—IODINE.

The introduction of iodine into the treatment is a recent and most happy event. It may, therefore, be of some interest to know how it occurred. In 1821, Coindet announced that an addition had been made to our therapeutics of a new resolvent, a precious discutient, viz., iodine. At the same time, a revolution was going on in England against mercury; and France became converted to the opinions promulgated by Broussais. Mercury became unpop-

ular, not only because it failed to cure venereal diseases, but because it provoked or aggravated the consecutive accidents. The innovators, therefore, proscribed mercury from the therapeutics of syphilis, and employed only soothing remedies, and anti-phlogistics, in other words, the means authorized by the physiological school. But the inefficacy of these means, in many cases, soon became apparent. Mercury they would not reinstate, for that would be a recantation, but they sought a new specific. Iodine arrested their attention, and to this remedy they resorted. Thus, in 1823, we find Richond-Desbrus prescribing this metalloid in cases of bubo and blennorrhagia; in England the advocates of the same doctrine entered the same path, and iodine was proclaimed an anti-syphilitic.

V.—IODIDE OF POTASSIUM.

Pure iodine is too difficult to manage, its effects are too diversified, too opposite even, for symptoms of intoxication are sometimes observed after very small doses, whilst in other instances very large doses may be taken with impunity. It has, therefore, been deemed advisable to combine this metalloid with other substances, and Buchanan, of London, was the first to unite it with amidon. He obtained an iodide of amidon, which was employed with the iodide of iron, both in France and London, as an anti-strumous, anti-syphilitic remedy, but this was done without method, and, it must be confessed, not with full confidence. Then (1836) appeared the famous lectures of Wallace.* This was the inauguration of the iodide of potassium as an heroic remedy against syphilis. One hundred and forty-two cases of venereal disease attested the virtues of the new medicine. And we must not omit here to mention that Wallace employed a formula which even to this day passes for one of the best. It is as follows:

℞. Iod. Potass. ʒ ii.
Aq. ℥ viii.

A tablespoonful to be taken four times in a day.

In this manner the patient takes nearly half a drachm of the iodide in the day, which quantity, it was asserted, in the majority of cases, is sufficient to overcome the worst cases of syphilis.

Soon Wallace had followers both in Germany and France. Cullerier, M. Ricord, and other practitioners still, experimented, and extolled the iodide of potassium in such a manner as to excite a real enthusiasm. They did not, however, go so far as to proscribe mercury, but the latter was compelled to co-operate with the new agent, and M. Ricord took upon himself to make the following distinction in the treatment, viz., tertiary accidents were to be treated by the iodide of potassium, and the secondary by mercury. This gave rise to objections, which I shall make known.

* *The Lancet*, March, 1836.

The iodide of potassium has many arguments in its favor: first, the truly admirable cures obtained by it, in a short space of time (as I shall hereafter show), the facility of its administration, and the absence of all real danger, which is not the case with pure iodine and the other preparations. Further, the iodide of potassium being very soluble in water, it may be taken in all kinds of vehicles and drinks. Its action being infinitely less irritating than that of pure iodine, it may be administered in very large doses: a practitioner in Paris, indeed, having given an ounce, and even more, in a day. It may be used in as small a quantity as one and a half grains. There are but few substances capable of being administered according to so great a variety of formulas, and under so many different circumstances of age, taste, convenience, and even caprices of the patient. The dose may also be proportioned to the degree and nature of the accidents; for I shall, in another place, show that the iodide of potassium may fulfil a double indication.

I shall not here insert all the different formulas which have been proposed for its administration, for, as has been stated, they are innumerable. I shall mention only the principal and most important.

M. Ricord employs the following:

℞. Iod. Potass. gr. iss.
Syr. Papav. ℥ i.
Aq. dist. ℥ iii.

The dose is to be increased every five days about eight grains, until we reach one and a quarter ounces in the day, a quantity which should rarely be exceeded.

A year afterwards, the same practitioner taught that we might commence with fifteen and even thirty grains a day, and that the patient would always tolerate two and two and a quarter ounces in the day.

Finally, in his notes to the second edition of *Hunter*, M. Ricord observes: "When tertiary accidents alone exist, the most successful treatment consists in the use of the iodide of potassium. We may commence with forty-five grains in the day. This is to be taken in three doses, in three glasses of the decoction of sarsaparilla, of hops or soapwort. Every five days the dose is afterwards to be increased from fifteen to thirty grains, which I rarely exceed." The two following formulas shows how large is the quantity given by M. Puche:

HOSPITAL FORMULA FOR THE SOLUTION OF THE HYDRIODATE OF POTASSA.

℞. Iod. Potass. ℥ iii.
Aq. ℥ xii.
Cochineal, q. s. f. rose-colored solution.

To be used in cases of chronic syphilis and tertiary symptoms, such as ecthymatous ulcerations, tubercles, periostitis, exostosis, and caries. Dose, from one to four ounces in a pint of bitter or sudorific tisane. To be taken at six different times at regular intervals.

SYRUP OF IODIDE OF POTASSIUM.

℞.	Iod. Potass.	ʒ v.
	Anisette of Bordeaux,	℥ iss.
	Syr. Sacch.	ʒ xiv.
	Cochineal, q. s.	

Dose, from one to four ounces a day in half a pint of cold water. The whole to be taken in four doses at regular intervals.

N. B.—The dose of the hydriodate of potassa in this syrup may be increased to three ounces.

I employ the iodide of potassium both as a tonic and an antisyphilitic. I never give more than fifteen grains to fulfil the first indication, and rarely exceed one drachm for the second object. Let me explain: I believe that almost all cases of syphilis may be sucessfully treated by mercury, if this medicine be properly managed; but sometimes the system is antipathic to it, and then, instead of producing curative, it produces morbid effects: thus, patients who are excessively debilitated, cannot be treated with mercury, which evidently depresses the vital forces, since it is called a hyposthenisant. I give, in these cases, the iodide of potassium, in doses from one to one and a half and fifteen grains, but never in larger quantities. With these doses I do not propose to act upon the diathesis; I aim not directly at the virus, but I endeavor to act upon the system, to strengthen it, and to place it in the best possible condition to resist the intoxicating agent, and at a later period to tolerate the use of mercury. The iodide of potassium is not, therefore, a specific, and when it cures, it does so indirectly, by a *contre-coup*. The stomach regains its tone under the influence of these minute doses, the appetite becomes keen, nutrition active, the strength re-established, and it is not uncommon for the patient to acquire a certain *embonpoint*. But sometimes the venereal affection continues obstinate. If the case be one of the superficial syphilides, it does not disappear; it may even become aggravated; now is the time to interpose the use of mercury, which may be employed alone, if the patient's strength be restored, or its use may be conjoined with that of the iodide of potassium. At a later period of the disease, when the fibrous, osseous, and deeper-seated tissues, are involved, it is of great importance to give specific doses, those which act directly on the malady. We may commence with half a drachm, and the same week increase the dose to one or one and half drachms a day. The following is my formula:

℞.	Iod. Potass.	℥ ss.
	Aq. dist.	℥ viii.

A tablespoonful to be taken morning and evening in a glass of hop or soapwort tisane. The dose may be gradually increased to six spoonfuls, and as, according to this formula, each spoonful contains fifteen grains of iodine, we give, therefore, one and a half drachms a day. I do not ordinarily prescribe the latter quantity.

At the *Hôpital du Midi*, the bottles containing the iodide are marked with transverse lines on their sides, so as to make divisions, each of which contains a tablespoonful of the solution, or fifteen grains of the iodide; the whole bottle contains eight spoonfuls. I have them made containing sixteen spoonfuls.

It is evident that the iodide of potassium, in a large dose, acts directly upon the diathesis; first, by the beneficial modifications which it produces on the disease in an incredible short space of time, and before the general health appears to be the least improved; 2d, by the failures which occur when less than fifteen grains have been administered, and the success obtained by increasing the quantity in precisely the same cases. I have known a young literary character, who had a chronic ulceration at the base of the tongue sufficiently deep to lodge the extremity of the finger. This patient was treated without success for six months with the iodide, which was not given in larger quantities than eight grains in the day. He had been treated in the country. On his arrival at Paris he came under my care, and I commenced with thirty grains a day; this quantity was increased to one drachm a day during the first week, and in thirty days the ulcer had completely healed.

[There can be no question that the iodide of potassium is often administered in doses too feeble to derive all the benefits that this remedy is capable of affording. Dr. Graves recommended thirty grain doses three times a day. During our recent visit to London we saw some inveterate cases of syphilis, which had remained for many months in the hospitals, and we ascertained that they were taking but two grains three times a day! But can the iodide of potassium cure even the tertiary stages of syphilis? We believe not, and such we find is the opinion of many experienced practitioners whom it has been our privilege to meet not only in Europe but our own country. As remarked by Sir Benjamin Brodie (Lect. in Lond. Lancet, Feb. 17, 1844), "You may remove slight symptoms by giving it for a time, and severe symptoms, by exhibiting larger doses; but in the latter case, so far as I have seen, it does not make a permanent cure, for the symptoms return again. As a prophylactic, it is not to be compared with mercury."

In a letter recently received from Mr. Langston Parker, he says, "I believe the curative effects of iodide of potassium have been over-rated. It suspends disease, but often fails to cure. Iodic cachexia, which is common from its prolonged use, is worse than any symptom which mercury produces. I have known it taken by patients for three, seven, and in one case (a surgeon) ten years; it always kept the disease in check, but when discontinued the symptoms became worse."

In this view of the subject, as we have been personally assured, Drs. Mussey, Willard Parker, and John Watson, coincide. At the Dublin Lock Hospital, we were informed, that in cases of much debility, they employed a combination of iodine and soda instead of the potash. It is administered in ten-grain doses three times a day. For a full account of the evidence in favor of iodine

and its compounds, we would refer the reader to the elaborate article of Dr. Hocken in the Ed. Med. and Surg. Jour. vol. lxi., and the work of Dr. Dunglison on New Remedies, last edition. —G. C. B.]

The iodide of potassium may also produce a prophylactic effect; it may assist the mercury in preventing the formation of the last stages of syphilis. Thus I often give it in small doses, after a complete mercurial course, in the treatment of primitive or secondary accidents, which have exhibited an unusual degree of obstinacy, especially when the patient is feeble. I then dissolve the iodide in the syrup of fumitory, or of burdock, of which a tablespoonful is to be taken two or three times in the day in a glass of hop *tisane*.

I have already shown that the use of the iodide is not to be restricted to the tertiary accidents, but that it has been used during every period of the anti-syphilitic treatment. If we examine the list of cases reported by Wallace, we shall find that it contains those of secondary accidents, and of late this medicine has been proposed not only in the second stages of syphilis, but even in the first, the so-called primitive accidents. MM. Payan* and Bazin† have published facts, going to show that this powerful agent may in certain of these cases produce happy effects.

I am far from wishing to dispute these facts, for I possess those of an analogous nature, having experimented with this medicine in every stage of syphilis. I have seen chancres and secondary cutaneous affections cured during the employment of this remedy; but its therapeutic action has never appeared so prompt and well defined, as when it is employed in the treatment of very chronic tertiary affections; in fine, I have never been able to satisfy myself beyond a doubt of its efficacy in the other forms of the disease. In these new applications the cure may doubtless be referred to the iodide, but we should not overlook the efforts of nature, for in almost all a sufficient time elapsed to permit such a result.

[The recent memoir of M. Melseus "*On the Employment of Iodide of Potassium as a Remedy for the Affections caused by Lead and Mercury*," has attracted considerable attention. He maintains that, after its absorption into the blood, it combines with the metallic poison, and forms with it a new and *soluble* salt—liberates the poison from its union with the injured part—dissolves it out, so to speak, and sets it afloat in the circulation. Thus free, as supposed, in the form of a double iodide of mercury and potassium, it escapes through the kidneys, in combination with any excess of iodide of potassium that may be present, and both remedy and poison are cast out together. Dr. Wm. Budd has given an analysis and translation of this memoir in the Jan. Number (1853) of the Brit. and For. Med. Chir. Review, and another notice of it by Mr. Parkes, Clin. Prof. in University College, may be found in

* Vide *Journal de la Société de Médecine de Bordeaux*, 1844.
† *Gazette des Hôpitaux*, 1843.

the April Number of the same Journal. Dr. Budd has appended numerous remarks corroborating the views of M. Melseus. Some twenty years ago Mr. Judd, in his Treatise on the Venereal, p. 564, thus remarked: "After mercury has produced ptyalism, broken down the general health, and begun to bring scrofula into action, iodine then appears to act in a far more salutary way than in cases wherein no mercury has been taken. Is it not possible, nay even likely, that under these circumstances the iodine (especially the hydriodate of potash) being taken into the system, forms an Hydriodate of Mercury in the living blood? Seeing that Biniodate of Mercury, in a solution of Hydriodate of Potash, formed a crystalline triple salt, I attempted to procure similar crystals from the blood after a course of mercury and Hydriodate of Potash, but failed." He then resorted to other experiments, from which he concluded that both mercury and iodine were present in the blood. The perusal of Mr. Judd's remarks upon the subject has satisfied us, that to him is due the credit of first promulgating the views now broached by M. Melseus. To those engaged in the investigation of this subject we would recommend the perusal of the interesting Essay of our esteemed friend Dr. J. W. Corson, entitled "*Cases testing the Iodide of Potassium, as an Antidote to the Injurious Effects of Mercury, and corroborative of the Experiments of M. Melseus,*" published in the New York Journal of Medicine and Collateral Sciences, Sept. 1853.—G. C. B.]

ACCIDENTS ATTRIBUTED TO THE IODIDE OF POTASSIUM.

Strictly speaking, these are not true accidents; they are, in the majority of cases, pathogenetic effects which subside on the discontinuance of the remedy, and which never assume a serious importance. These effects are manifested on the mucous membrane of the nose, eyes, mouth, stomach, and intestines; they may likewise be observed in the urinary organs, the skin and nervous system.

The most prompt and common effect is upon the pitulary and ocular mucous membrane. The majority of patients are attacked at the commencement of the use of the iodide of potassium, with coryza which is sometimes very acute. At the same time well-marked symptoms are observed of catarrhal opthalmia, with more or less decided serous chemosis and œdema of the eye-lids; sometimes this amounts but to a simple redness. It is rare for both mucous membranes to become the seat of a muco-purulent secretion. I have seen a patient at the *Hôpital du Midi*, whose conjunctiva at first became tumefied, after which followed a sanguineous effusion into the cellular tissue of the eye-lids, which absolutely discolored them like an ecchymosis. The patient, seen at a distance, seemed to wear large glasses of a violet blue color. I treated him for a chronic engorgement of the testicle; he was very much debilitated; he took only fifteen grains of the iodide of potassium.

Salivation frequently occurred; it resembled that of pregnant women, consisting of a kind of regurgitation of a saline saliva, of

a metallic and bitter taste. To a certain extent it was like a mercurial salivation, for in some patients an erythematous, œdematous tumefaction of the gums occurs; but this congestion never amounts to an inflammation as in the case of a mercurial ptyalism. Further, it is never accompanied with ulcerations of the lining membrane of the mouth; it has neither the peculiar odor nor fetor of the breath. According to M. Payan, chemistry has been able to detect the presence of the hydriodate of potassa in the saliva.*

In the majority of cases the digestive organs tolerate well the use of the iodide of potassium, and we often observe an increase of the appetite, especially when it is administered in small doses; but sometimes patients complain of a pain and uneasy sensation in the region of the grand cul-de-sac of the stomach. This pain sometimes resembles that of pleurodynia. This did not escape the attention of Wallace; he speaks of a cough and difficulty of respiration. But the pain in these cases is more profound than in pleurodynia. In certain cases the thirst is increased, although generally the appetite alone is augmented, and nutrition promoted, so that the patients soon acquire a degree of embonpoint. Sometimes, but more rarely, vomiting and diarrhœa are observed. M. Payan mentions the case of a scrofulous child, in whom the iodide of potassium produced a chronic gastro-enteritis, which required nearly a month for its removal. A chronic gastro-enteritis, however, which soon subsides, I must say is an accident of very little importance, and I would add, that M. Payan attributes the disease in this case to faulty nutrition.

Symptoms of bronchitis have also, though rarely, been noticed. Certain affections of the skin may also appear; these most generally assume the form of acne, and ecthyma, with very small pustules. I treated a patient in town whose face was covered with an eruption which resembled the first appearances of variola, and this occurred on the next day after the commencement of the administration of the iodide of potassium, if we exceeded fifteen grains at a dose. It is still more rare to meet with the spotted malady of Weslohl. M. Payan cites an example in his memoir. The patient was of a lymphatic temperament. He had taken the iodide for two months. Spots appeared on both legs resembling ecchymosis resulting from a contused wound.

The urinary organs are very much affected in certain subjects, and the secretion of urine greatly augmented in the majority of cases. M. Payan has seen a patient who voided seven pounds of urine in twenty-four hours. He took eighteen grains of the medicine in the day. It should be stated, however, that this patient had a chronic affection of the bladder, and perhaps of the kidneys.

The circulation, apparently, is not affected. According to the Italian school, the frequency of the pulse is diminished. M. Payan assures us, on the other hand, that it is accelerated. The cases of hemorrhage, which have been very rarely observed, have been

* Vide a work by this physician on the employment of the iodide of potassium, &c., p. 221.

regarded, sometimes as passive, sometimes as active. I have seen a patient affected with nasal hemorrhage, after having taken thirty grains of the iodide in two days; he was excessively feeble. As to the nervous system, says M. Ricord, some patients experience what is called an iodic intoxication, and which is characterized by an impairment of the voluntary movements, twitchings of the muscles, a sense of weight in the head, a kind of mental inactivity, and occasionally by slight disturbance of the intellect.

"The iodide of potassium has been accused of producing atrophy of the glands, particularly the mammary, and the testicles. It is indeed one of the most powerful resolvents with which I am acquainted, but it affects only the diseased parts, the atrophy of which it may sometimes produce, but this is not its only operation."*

VI.—IODIDE OF IRON.

The iodide of iron is sometimes employed in the treatment of the last stages of syphilis. According to M. Bouchardat, the physicians at the Hotel-Dieu have for ten years been accustomed to administer this *heroic agent* in large doses, for the removal of syphilitic accidents of long standing, and which have resisted the preparations of mercury.

I am satisfied that the iodide of iron is a therapeutic agent of certain power; but I am confident that in cases where mercury has proved ineffectual, the use of the iodide of potassium will be followed by the greatest success.

The iodide of iron is particularly adapted to cases where a decided syphilitic cachexia exists, and a state of anemia, or of debility complicated with scrofula. M. Baumés has observed, in cases of imperfect plasticity of the blood, and of obstinate ulcerations, the most prompt and remarkable effects from pills of the proto-iodide of iron. The formula is M. Bouchardat's formula:

℞. Iod. ʒ iiss.
Fer. ʒ i¼.
Aq. ʒ iiiss.

Subject the whole to a temperature of 60°, *until the liquid is discolored; pour off, and rapidly evaporate in an iron mortar. When the water is nearly evaporated, add:*

Mel. ʒ ii.
Pulv. Gum. and Marshmallow. q. s.

Make one thousand pills, each of which will contain about one and a half grains of the proto-iodide of iron. Dose, four, to be gradually increased to twenty and thirty a day.

This is a very convenient form for administering the proto-iodide of iron. But it should not be forgotten, that the patient will not

* *Notes to Hunter*, 2d ed.

tolerate the quantity here indicated, except when the salt contains red iodine in a free state. The physicians at the Hotel-Dieu have often remarked to M. Bouchardat, that they could not administer the same quantities to patients in private as in hospital practice. This chemist attributes the difference to the presence of free iodine in the pills made by ordinary chemists. According to him, this inconvenience may be obviated by the following formula:

℞. Proto-iodid. Fer. ʒ iiss.
Carb. Pot.
Mel. āā gr. 1¼.
Pulv. Gum. and Marshmallow. q. s.

Make one hundred pills. From one to ten to be taken in the day.

What answers still better, is not to increase the doses of the proto-iodide, and for the reason, too, that it is necessary to act upon the system a long time before a cure can be really effected.

I employ most generally the syrup made according to the folfowing formulas:

℞. Proto-iod. Fer. ʒ i¼.
Syr. Sacch. ℥ xvi. M.

Dose from five to six tablespoonfuls in the day.

℞. Syr. Sudorif. ℥ xvi.
Proto-iod. Fer. ʒ i. M.

Dose, two tablespoonfuls daily; may be increased to six spoonfuls.

VII.—GOLD, SILVER, AND PLATINA.

Gold in the form of powder, or combined with oxygen, antimony, silver, or amalgamated with mercury, has been employed as an anti-syphilitic. Ucay, in his *Nouveau traité de la maladie vénérienne* (1699), remarks: "The virtues of this remedy cannot be too highly praised." Ucay was not the only admirer of this remedy at this epoch; silence, however, soon usurped the place of these pompous eulogies, and it became buried in complete oblivion. At a later period (1811), Chrestien prescribed gold as a *new remedial agent in the treatment of venereal and lymphatic affections.* Serre (of Montpelier) experimented with silver, and platina. Chrestien employed especially equal parts of the hydrochlorate of gold and of soda, in the form of powder; he also made use of the *oxide* precipitated by tin or potash or metallic gold, in a state of minute division. "These three preparations succeeded completely, no matter what the nature of the venereal symptoms for which they were prescribed."* The powder was administered according to the method of Clare, by making frictions on the gums, the internal

* Lagneau, t. ii., p. 193.

surface of the lips and on the tongue. Chrestien also employed the following pills:

℞. Hydrochlor. Aur. et Sod. gr. i.
Ext. Daph, Mezer, gr. xii.
Syr. Simp. q. s. f. pill 15.

Dose, one in the day; to be gradually increased to three or more daily.

Gold has always retained its advocates at Montpelier, especially with the members of Chrestien's family. Experiments have been made, with every precaution, at Paris, by M. Legrand, and at Toulon, by M. Reynaud. Remark how it has been employed and judged by the latter surgeon. I will afterwards mention the opinions formed of this agent by some other writers on syphilis, and, in passing, will also allude to their estimate of silver and platina.

M. Reynaud used the same combination as did Chrestien: one grain of the salt and two grains of the iris powder, or lycopodium, moistened with water and alcohol so as thoroughly to mix; the whole being divided into twelve equal parts. One of these was rubbed on the tongue and internal surface of the cheeks every morning. The patient moistened the right index finger with saliva, dipped it into the powder, and made frictions on the tongue from five to ten minutes; the end of his finger was thrust against the cheeks. The latter point is selected for the frictions, if from any cause it cannot be made upon the tongue. They may be used upon the gums, but then it would be difficult to guard the teeth against the action of the gold, and to prevent the disagreeable dark color which it produces on their necks. A copious secretion of saliva follows, this should be entirely swallowed, as it is loaded with particles of the salt.

After this first series of frictions, M. Reynaud resorted to a second, dividing the same quantities of the medicine into ten parts, and afterwards a third series, the powder having been divided into eight parts, a fourth into seven, a fifth into six, a sixth into five, a seventh into four, and the eighth series into three parts. In the more inveterate cases, he made several experiments with the third and fourth divisions, so as nearly always to administer more than Chrestien, and sometimes to reach as high as from twelve to fifteen grains of the auriferous salt. According to M. Reynaud, from six to nine series of frictions were ordinarily required, in other words, from six to nine grains of perchloride of gold and soda were used. Often, especially in the worst cases, this practitioner conjoined the use of the oxide of gold in the form of pills, which were combined with the extract of the bark of mezereum, but most commonly with the extract of cicuta, or of the woody nightshade, in the proportion of one grain of the oxide of gold, to nine grains of either of the extracts which was made into ten pills, each containing a tenth of a grain of gold. Two of these were given in the day, morning and evening, and the latter either an hour before or

an hour after eating, in this manner from eight to ten or twelve grains of the oxide of gold were administered

Tisanes of soapwort, of chicory, or sarsaparilla, are prescribed as accessory means. Of course proper attention to hygienic measures is to be observed.

M. Reynaud remarks that he has never observed the disorders of the mouth and the gastro-intestinal affections which some authors have attributed to the influence of the preparations of gold, and he has employed them at least in a hundred instances. Frequently they produce no appreciable effect upon the system, sometimes they give rise to a little general excitement, and in a few cases only, is this excitement accompanied by a slight cephalalgia or febrile reaction, which the temporary cessation of the remedy causes soon to disappear. M. Reynaud observes in conclusion, that *almost always*, under the influence of this treatment, he has seen the tertiary accidents of the syphilis gradually diminish, and finally become completely cured.*

It will be remarked that I have not commenced the exposition of the opinions entertained in regard to the efficacy of gold, with any expression which can be regarded as malevolent. It has been my desire, rather, to give the views of an author, who may be regarded as its advocate. But I cannot refrain from remarking that M. Reynaud is also a great partisan of the iodide of potassium, a remedy which, as is known, overcomes the same accidents which M. Reynaud seeks to combat with the preparations of gold. The great advantages attributed by Chrestien to the latter aroused the attention of the *Société de Medicine*, and Cullerier (the uncle) was charged to make experiments with them at the *Hôpital du Midi*. These were not favorable to what was then called the new method. Thirteen patients were submitted to this treatment, and thirteen entrusted to the *vis medicatrix naturæ*. The lesions in all were the same, and the results were identical.† According to M. Ricord, gold has always been ineffectual as a general method in the treatment of primary affections, and in that of the general consecutive accidents, it is medicine of a most doubtful reputation. The majority of cases cured by this remedy are far from being incontestible cases of syphilis, and when it has been administered in those of an unquestionable character, after the use of other means and of mercury in particular, it proves, according to M. Ricord, not the virtues of the new medicine, but the advantages of suspending for awhile an injurious treatment.

The preparations of silver in all their forms, and after the indications pointed out by M. Serres (of Montpelier), have seemed to M. Ricord still more uncertain than those of gold, both in the treatment of primary and of confirmed syphilis. They were administered at first in small quantities, and gradually increased to the enormous doses of from fourteen to sixteen grains daily. M. Ricord observes that these doses produced only irritation of the

* P. 398.

† Vide. the detail of experiments in tome ii., p. 195, *et suiv*, of M. Lagneau.

digestive organs, which rendered it necessary to discontinue its use.

M. Cazenave and Biett experimented with the preparations of gold. According to these practitioners, the results have always been so doubtful as to give them but little confidence in the value of these agents. As to the preparations of silver, in twenty cases treated with the cyanuret, the chloride, iodide, and the phosphate of silver, in none were they crowned with success. But, Biett and M. Cazenave did not treat the primitive symptoms which may disappear under almost every form of treatment, but their cases were those of secondary accidents, those which are called *symptoms of confirmed or constitutional syphilis.*

It is already apparent that the experiments of Cullerier, Biett, MM. Ricord and Cazenave, are far from according with those of Chrestien. To these practitioners may be added numerous others, who have arrived at the same conclusions. M. Payan having examined these facts and opinions, thus concludes: "The treatment with gold cannot be established as a general method; it should be reserved,—1st, for those cases in which mercury has failed; 2d, where a decided intolerance of the mercurial preparations forbids its use; 3d, for those where the inefficiency of mercury is to be attributed to a strumous complication; 4th, for those where the symptoms depend less on syphilis than on a mercurial hypersaturation which may engender accidents perfectly analogous to those of tertiary syphilis."

For my own part, I believe that our therapeutics are not so rich as to permit us for a slight cause to reject any means, especially when accompanied with the honorable testimony which has been awarded to gold; but it will be remarked that those who wish to retain in practice the preparations of gold, have especially employed it towards the latter stages of the disease, after mercury has been sufficiently used, or after it has failed. Now this is the period of the disease, during which, at the present day, the iodide of potassium is chiefly used, the advantages of which cannot be questioned. What then remains for the preparations of gold? The cases alone which are refractory to the iodide of potassium.

VIII.—DOUBLE SALTS.

In speaking of the iodurets, I have already alluded to a double salt, employed by M. Puche, viz., the iodhydrargyrate. Others were used very anciently; that which has been handed down to us, and which has always maintained a certain degree of reputation, is the *soluble mercury of Hahnemann.* M. Cazenave goes so far as to say that it is one of the most useful preparations in the treatment of the syphilitic eruptions. It is of easy management and toleration, which renders it particularly adapted to delicate and feeble subjects. The activity of soluble mercury is not great, but it suffices in cases of superficial eruptions; and in those of long

standing, it may perhaps be used with advantage. In severer cases it is better to resort to the proto-iodide of mercury.

The soluble mercury of Hahnemann is composed of

92.2 Protoxide of Mercury.
1.9 Ammoniac.
5.9 Nitric acid.

As this salt is readily decomposed, Hahnemann preferred the form of powder, after the following formula:

POWDER OF THE SOLUBLE MERCURY OF HAHNEMANN.

Soluble mercury.
Opium, āā. gr. i.
Powder of tragacanth or liquorice, 5 to 10 grains.

M. Cazenave employs the following pills:

Soluble mercury:
Thridace, āā. ʒ ss.

Make forty pills: one to be taken morning and evening. M. Cazenave is reported to have given as many as four daily.

IX.—SUDORIFIC WOODS.

These woods, which at one time had so great a reputation, have now fallen into the most complete disrepute. Even guaicum, which nearly dethroned mercury, is now regarded but as an accessory means, or as a vehicle for other remedies.

We know that this wood was first brought from St. Domingo by the Castilians, who used it medicinally. Leonard, Poll, and especially Ulric of Hutten, who owed it a certain debt of gratitude, extolled it beyond measure.

The following *tisane* of guaiac is still employed conjointly with the preparations of mercury:

℞. Guaiac, (*rasped*), ʒ iv.
Aq. Com. 2 quarts.

Macerate twelve hours, reduce it to one half, then add:

Rad. Glycyrrh. ʒ i.

Sarsaparilla is still used in the form of decoction during the administration of mercury, especially in the treatment of the consecutive accidents. With some practitioners, it is from custom rather than from any conviction of its utility, that it retains its place. It enters besides into the composition of certain *tisanes* and syrups, as we shall hereafter show; as for example, in the *tisane* of Arnoud, and the syrup of Cusinier.

The simple sarsaparilla *tisane* is prepared according to the following formula:

℞. Sarsapar. ℥ iv.
Aq. Com. 2 quarts.

Macerate twelve hours, and afterwards bruise the roots in a marble mortar, and reduce to one half the quantity.

The *tisanes* of China root, of sassafras, and other sudorific woods, are prepared in the same manner. The roots of *lobelia* and *astragalus* are no longer used. As to the soapwort, its leaves are much used at the present day, in the preparation of a tisane in which the iodide of potassium is dissolved.

X.—COMPOUNDS, PARTLY MINERAL, PARTLY VEGETABLE.

If with an unprejudiced mind we carefully examine the majority of these compounds, we shall soon become convinced that their efficacy depends on the mineral substance they contain. Thus, the syrup of Cusinier alone possesses no efficacy, but united with corrosive sublimate it then becomes a powerful remedy. The *tisane* of Rittmann is of therapeutic value only on account of the proto-chloride and the sulphuret of mercury that it contains; that of Feltz is due to the sulphuret of antimony, and thus it is with all the *tisanes*, all the compound syrups, and all the *robs;* when uncombined with other agents they have but a moderate action.

I give the formulæ for two of the compounds which have enjoyed the greatest reputation, and the absence of which might here be regretted; I refer to the syrup of Cusinier and the *tisane* of Feltz:

SYRUP OF CUSINIER.

℞. Sarsapar. ℔ i.
Aq. Com. ℔ xii.

Macerate for twenty-four hours, and reduce to four pounds. Having decanted the liquor, subject what remains to the same operation twice. Mix these three decoctions, and add:

Flowers of borage, ℥ ii.
White Roses, ℥ ii.
Aniseed, ℥ ii.
Senna, ℥ i.

Boil until reduced one half; add:

Sugar, ℔ i
Honey, ℔ i.

Dose, half a glass three times in a day, with the sarsaparilla tisane.

This is the syrup of Cusinier, of the first, second, and third boiling, that is after we add one, two, or three grains of the bi-chloride of mercury to each pint of the syrup, according as we wish to

increase, or more properly speaking, to realize its anti-syphilitic virtues.

M. Baumés prescribes, morning and evening, with two or four tablespoonfuls of the syrup of Cusinier, half a tablespoonful, or a whole spoonful of Van Swieten's liquor, the dose of which is gradually increased.

In the place of the deuto-chloride we may introduce into the syrup of Cusinier, the cyanuret of mercury, which is less easily decomposed. But M. Baumés observes that we must then attentively watch the administration of the syrup when this addition has been made, its action on the digestive organs being severe:

FELTZ'S TISANE.

℞.	Sarsapar.	ʒ ii.
	Icthyocol.	ʒ iiss.
	Sulph. Ant. (washed,)	ʒ iii.
	Aq.	℔ iv.

Evaporate to one pound. A glassful to be taken daily. The sulphuret of antimony is ordinarily washed in boiling water.

M. Rayer, who employs this preparation, very frequently remarks that we thus remove a large portion of the arsenic contained in the sulphuret of antimony, by which its efficacy is partly destroyed. But as the proportion of the arsenic contained in the *tisane* is sometimes too considerable when the antimony is not washed, M. Rayer often prescribes, in the place of the *tisane* of Feltz, the following:

M. RAYER'S MODIFICATION OF FELTZ'S TISANE.

℞.	Decoc. Sarsapar.	ʒ xvi.
	Arsen. Sod.	gr. $\frac{1}{22}$.

CHAPTER II.

ON SPECIAL CONSECUTIVE VENEREAL AFFECTIONS.

SECTION I.

SYPHILITIC ERUPTIONS.

Syphilida.—Syphilides.—Syphiloderma.—When the syphilitic virus has infected the system in a certain manner, various eruptions are produced upon the skin. They assume almost every elementary form of cutaneous disease, but have certain peculiarities which reveal their nature.

So common and grave were the affections of the skin in what was called the epidemic of the fifteenth century, that they did not fail to attract the special attention of observers. From that epoch to a period nearer our own, every syphilitic eruption was confounded under the name of *pustules*. In calling these eruptions *syphilides*, Alibert rendered a double service to science: he created a happy and precise denomination, and contributed to destroy the false idea to which the word *pustule*, used as a generic term, gives rise. But it is to Biett and his pupils that we are indebted for the proper application of Willan's method to the study of the *syphilides*, and for a classification based upon the elementary lesions of the skin. No one can deny the advances here made by this school; but it is equally true that much yet remains to be learned in the study of these eruptions.

I.—GENERAL CHARACTERS.

I proceed, in the first place, to describe the general characters of the syphilitic eruptions; I shall afterwards classify them, and study each variety according to the divisions established since the school of Biett.

The syphilitic eruptions present a physiognomy that cannot be mistaken when once the attention has been fixed upon them. This physiognomy consists in the color, form, chronicity, and marks which they leave behind.

Color.—The color of these eruptions, the ham-color of Fallopius, the copper-color of Swediaur, has always arrested the attention of observers. It is still regarded as the most characteristic feature, that on which the differential diagnosis of these eruptions is based, that which distingushes them from simple eruptions or those of any other nature. And yet the value of this test has been disputed and even denied! It is true, that after certain ulcers, certain simple eczematous eruptions, especially on the legs, we observe the skin to assume nearly the same tint; sometimes, also, the spots of purpura, before they disappear, become of a faint red color; but the slightest inquiry into the circumstances preceding the first stages of the disease will remove all doubts. Instead of a well-marked tint, there sometimes exists a shade difficult of detection. Fallopius was the first to remark: *non enim ruber, non albus, non pallidus.* There are cases, says M. Cazenave, where the redness is but slight, the tint varying from this to a gray color. Again, the shade may depend upon the period of the disease as well as other circumstances: thus, at the moment of the eruption of roseola, of the papular form of the disease, the color is of a bright red, which becomes darker as the eruption becomes more distinct, as is represented in plate 5, fig. 1. Is this owing to the vascular congestion in the first period masking the alteration of the chromatogenous apparatus? or is it rather owing to the fact that this apparatus is not yet modified? There are cases in which we may distinguish the two colorations: thus, in certain tuber-

cular affections, by pressing with the finger and emptying the vessels, we may cause the redness to disappear; but the copper color remains, because it depends upon a matter which is combined with the layer of the skin. In the last stages of certain lenticular squamous syphilitic eruptions, we observe the coppery red pass into an obscure grayish yellow, which is called the dirty coppery yellow.

The quinine tubercles and pustules leave behind livid spots of a dark red color, like the ecchymosis of purpura. But even then, if we carefully examine the whole surface of the skin, we shall find places exhibiting the coppery-red color. Sometimes, instead of being effaced by the long standing of the disease, the redness continues and becomes more distinct. Thus, we occasionally find red spots long after the eruptions have disappeared. Cold appears to affect the color of certain of the syphilitic eruptions; roseola is one of those which it renders more apparent.

The persistence of the color of these eruptions, their chronicity, and the impossibility of causing them to disappear by pressure, seem to prove that the affection, in these cases, is seated between the epidermis and the dermis, in what is called the *rete mucosum*—in other words, in the chromotogenous apparatus, of which the secretion has been altered.

I have already spoken of the varieties of tint which are peculiar to the period of eruption; I should add, that on the base, to speak classically, there are individual shades, which depend upon modifications in the integument, and its vascularity. Thus, in certain subjects with a fine white skin, the redness is lively in roseola, and lichen, and especially as I have already stated at the commencement of these eruptions. Towards the termination, in males whose skin lacks transparency and vitality, the color is always duller; often it is violet. In persons of a bilious temperament, the redness assumes a brownish shade. In those of a cachectic habit, the tint approaches that of a venous injection, being livid. I have now under my care a corpulent patient, of a very lymphatic and apathetic temperament; he has had an indurated chancre, and this has been followed by livid spots upon the skin, which I should never have regarded as syphilitic, had I not seen the development of all of the phenomena. It is in such subjects that the cicatrices of the syphilitic eruptions which ulcerate, have a blueish appearance. In conclusion, the coppery tint is one of the best signs, for it seldom occurs in other than syphilitic affections; it may of itself, in certain cases, establish the diagnosis, but it must then be very decided, so as not to be masked by any complication with other diseases. In every case we should observe all the features which complete the physiognomy of a syphilitic eruption.

Form.—The most important symptom, next to the color, is the form of the eruption. It is generally curved, circumscribing portions of a circle, or entire circles, or roundish spots. This is observed not in isolated places only, and limited to small portions of the surface, but whole groups of vesicles, of tubercles and scales are thus surrounded. True, this feature is wanting in certain of

the eruptions, as in the papular form, and it is found in some cutaneous affections than the syphilitic, for simple herpes may assume the circular form. But there are eruptions which do not exhibit this character, except when they are of a specific, of a syphilitic nature: thus, the elements of the tubercular eruption grouped together, are surrounded by a circle more or less complete, more or less perfect. What is remarkable is, that we see, occasionally, the circle formed partly by one and partly by another organ: thus, in the horny syphilitic eruption, we sometimes observe a segment of a circle on the palmer surface of the finger, whilst the other segment is inscribed upon the adjoining finger. I have under treatment a patient who is affected with herpes circinnatus on the genital organs; one-half of the circle exists on the root of the penis, the other upon the scrotum (plate 6, fig. 1). For a long time this singular disposition of syphilitic eruptions has attracted the attention of observers: thus the term *corona veneris* is a very old one.

Chronicity.—A syphilitic eruption being essentially a chronic affection, we find that the sensibility of the parts is but little modified; thus, there is neither acute pain nor pruritus, even in those forms assumed by the eruptions which, in their simple state, are sometimes remarkable for their intolerable itching. Heat is a symptom which is also absent. However, even here, we must not be too absolute, and deny any changes of sensibility or of the temperature, in every stage of the eruption. Thus, of seventeen patients, M. Legendre remarked that thirteen suffered not the slightest pruritus, but three complained of it a little, while in the fourth, it was very severe. During the first stages of a tubercular eruption, it is not uncommon to hear patients say that they feel an itching sensation in the evening, when they begin to get warm in bed, and facts are not wanting to show that a true febrile excitement has preceded a syphilitic eruption.

The chronic character of these affections is due, not only to the absence of alterations of the sensibility in the majority of cases, but to the slow pathological processes which are observed in certain forms. Thus, in the pustular form, we sometimes observe a large indurated base, surmounted by a small suppurating point; in the vesicular variety, we find the vesicle remaining unbroken, and preserving its transparency for four, five, or six days, surrounded by an areola, the redness of which soon fades.

Ulcerations.—These are much more frequently observed as secondary lesions of the syphilitic than after ordinary eruptions, for *herpes zoster* and *ecthyma* alone offer this peculiarity. The excavated ulcer of the syphilitic eruptions is generally of a regularly roundish form, with reddish, perpendicular edges, with a grayish and sometimes a bloody base. These characters are especially to be seen on the lower extremities. Occasionally the ulcer assumes an oval form; sometimes its edges are irregular and scalloped; then a group of small ulcers is confounded into one of larger dimensions, the edges of which involve a portion of the circumference of the constituent ulcers: in this manner it is enlarged by

the process of ulceration. There is another method, viz., mortification: thus, at some point of the circumference, the dead skin and the separation of the eschar produce a loss of substance which enlarges the ulceration. I shall return to this phenomenon in describing the serpiginous ulceration. Most generally the ulcer increases regularly in all directions, and is arrested only when it has attained a certain diameter: thus, M. Legendre remarks that he has never seen a cicatrix of an *isolated* ulcer present a diameter of more than a five-franc piece. The ulceration of a syphilitic eruption has a much more decided tendency to reparation than that which supervenes on other cutaneous affections. It remains but a short time stationary, and tends rapidly to heat, whilst non-syphilitic ulcerations of the extremities remain unchanged for two and even three years. But, most frequently, during the cicatrization of a syphilitic ulcer at one point, another is progressing at another point; or, if but one ulcer exist, whilst one portion of it is undergoing reparation, another is enlarging its dimensions: the ulcerations losing nothing in this contest with the reparative forces. Thus, taking the syphilitic ulcer altogether, we see that a very long time is required for its cure.

I treated, in Ward 11, Bed 26, a barber, who was affected with both forms of the serpiginous ulceration to a truly incredible extent, and in this case I obtained extraordinary success from dressings with the *vigo cum mercurio*. This patient had an indurated chancre on the penis, several superficial eruptions, ulcerations in the throat, and syphilitic engorgements of the testicles; last of all, he had large ecthymatous pustules, which ulcerated to such an extent, that on the 15th December, 1851, the right inferior extremity presented two enormous solutions of continuity, which nearly came in contact with each other; one was situated on the external border of the right thigh, reaching from the knee towards the trochanter, being nineteen centimeters six and one-third inches in length, and three and one-third in breadth; the other commenced immediately below the patella, occupied the external, anterior, and somewhat of the internal surface of the leg, extending towards the foot, and was five inches in length, and six and two-thirds in breadth. On the external surface of the knee, these two ulcers were not more than some two-fifths of a line distant from each other. Three smaller ulcers were scattered on both lower extremities; on the left calf of the leg, and the popliteal space, there were two, one of which was of the size of a five-franc piece, the other of double the size. The patient was in a very serious condition, being exhausted by the suppuration. Internal and external treatment had failed. I then applied the dressings with little bands of the vigo. They were made to overlap as in the *dressing by occlusion;* they were renewed every three days, and at each dressing there was a decided improvement, so that in less than a month, reparation was complete. The patient regained his *embonpoint*, and his general condition was very satisfactory. Sometimes under the influence of this treatment, the patient became affected

with a mercurial ulceration on the alveolar border of the lower jaw, and there was the commencement of a salivation.

This case is highly instructive. We here see a patient who had been subjected to various external and internal measures: 1st, simple cerate, opiated cerate, dressings of aromatic wine, repeated cauterization, emollients, solutions of iodine; 2d, combinations of mercury and iodide of potassium; simple mercury, iodide of potassium alone, the preparations of iron, cod-liver oil, all failed. I employed the dressing already mentioned, and this measure was crowned with speedy success. Was it owing to the physical, local action of the plaster, or was it the result both of the local and the general action? I have stated that the mouth became affected as during a mercurial treatment, and we know that the vigo contains mercury, and that it was applied to very large surfaces. In this case, then, a feeble subject, in the last stages of syphilis, was cured by the external application of the mercury!

Cicatrices.—The cicatrices left by syphilitic eruptions generally present the following characters; they are circular, and more or less depressed; when recent, they have a bronze color, and sometimes their tissue is slightly prominent; beneath the epidermis, we see the superficial vessels broken; at a later period these become effaced, and a kind of internal absorption seems to be established; they lose their violet tints, become white and more depressed; their surface, of a dull white color, is also tense or corrugated, shining or swollen, and sometimes furrowed with hard and prominent bands. Under certain circumstances they are white from the first, but of a blueish white; they are then surrounded by a coppery areola which tends constantly to diminish, and the color of which is gradually lost in the surrounding skin. Syphilitic cicatrices may present bands similar to those following extensive burns; they sometimes degenerate and become covered with a kind of keloides. This phenomenon has been noticed particularly to occur on the cicatrices of certain cases of rupia, and of the serpiginous tubercular variety. When I come to treat of this form, I shall relate a very remarkable example of this cicatricial degeneration.

II.—VARIETIES

Having described the general character of the syphilitic eruptions, I proceed, in the next place, to study them in particular. Following the example of M. Cazenave, I shall establish seven varieties:

1. Exanthematous. (Fig. 1, pl. 5.)
2. Papular. (Fig. 2, pl. 5.)
3. Squamous. (Fig. 3, pl. 5.)
4. Vesicular. (Fig. 1, pl. 6.)
5. Bullous. (Fig. 4, pl. 5, et fig. 2, pl. 6.)
6. Pustular. (Fig. 3, pl. 6.)
7. Tubercular. (Fig. 5, pl. 6.)

Fig 1.

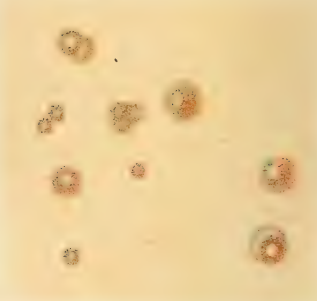


Fig 2.

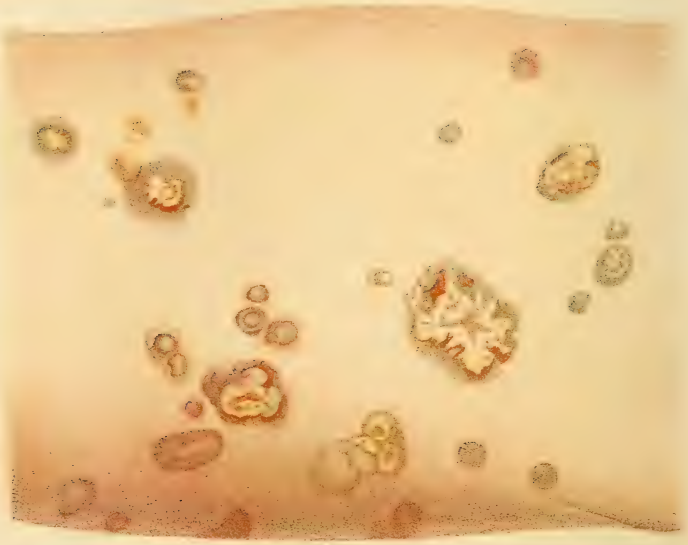


Fig 3.

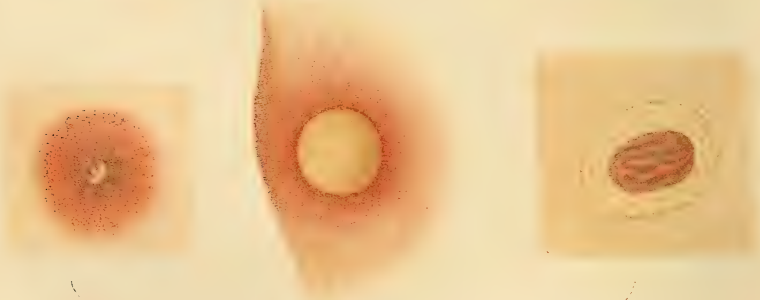
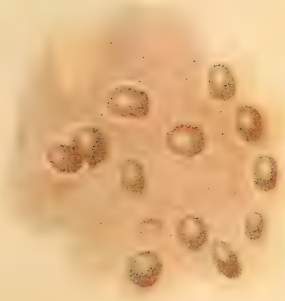


Fig 4.

Fig 1. *Roseola* Fig 2 *Papula* Fig 3 *Psoriasis* Fig 4. *Pemphigus*

Fig 1

Fig 2



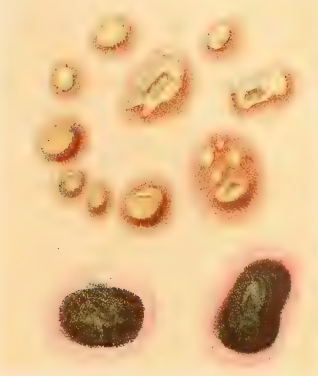


Fig 3.

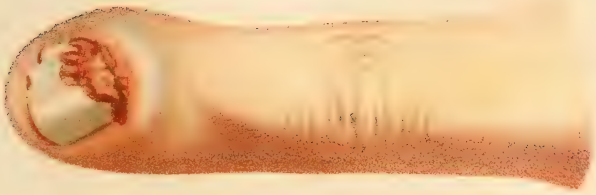


Fig 5

Fig 1 *Herpes circinatus* Fig 2 *Rupia*

Fig 3 *Scabiola* Fig 4 *Tuberculæ* Fig 5 *Unguis*

At the head of each variety I shall offer a few remarks on the corresponding eruption regarded in its simple states, and this for the benefit of the young practitioner who may not remember facts which are indispensable in the study of these eruptions.

EXANTHEMATOUS SYPHILITIC ERUPTIONS.

According to Willan, the exanthemata are characterized by red spots of different forms, and scattered irregularly over the the surface of the body, the skin retaining its natural color in interspaces, and the eruption terminating in the exfoliation of the epidermis. This is the most common form of the syphilitic eruptions.

Roseola.—The syphilitic eruption which naturally comes under this category is the *roseola*, which strongly resembles, both by the disposition of its spots, and sometimes even by its tint, common *roseola*, rubeola. But the syphilitic eruption sooner or later assumes the coppery tint (pl. 5, fig. 1), and towards its termination, a grayish shade. The color slowly disappears under the pressure of the finger, and generally it does not perfectly disappear. Roseola is observed principally on the anterior part of the base of the chest, the neck, face, and extremities, particularly the superior. The eruption has no particular form; the patches are irregular, sometimes circular; at first view they appear somewhat elevated, but this error is soon corrected by passing the finger over them. They gradually increase in numbers, sometimes rapidly, so that the whole eruption is established in twenty-four hours. The color of the roseola may vary during the progresss of the disease, either from known or unknown influences. Thus the spots become more distinct under the influence of cold after emerging from a bath, and mental emotions may cause the reappearance of an eruption which for some time had disappeared. This phenomenon occurs especially in cases of chronic roseola. Sometimes in the place of a coppery-red color it is a *yellowish red*, constituting the *salmon-colored* skin. (J. S. Petit. Hennen.) Finally, a period arrives when there is a very slight exfoliation of the epidermis, the tint becomes grayish, and the portions of the skin which have been colored now appear as though they were only dirty.

Most generally roseola is not preceded by any febrile excitement, and the patient is sometimes astonished to find his body red, a fact which serves to distinguish this syphilitic eruption from the corresponding simple exanthemata, and from rubeola. But in some cases we observe febrile reaction from acute affections of the skin; these cases are rare. What is much more common, is to notice a slight indisposition for two or three days, lassitude, cephalalgia, and wandering pains in the limbs, the pulse not being sensibly affected.

Roseola occasionally assumes a character somewhat acute, and we then observe febrile symptoms before, and even after, the appearance of the eruption; the patient then also experiences a kind of pruritus, which, however, is very rare, for roseola is accompa-

nied neither by heat nor itching. These characters belong especially to the exanthematous eruption, which follows soon after chancre, the starting point of the disease, and with which the eruption may co-exist. The duration of this form of roseola varies from three to four weeks. Those who have spoken of two or three days probably do not know that the eruption, in certain cases of roseola, becomes so pale as to lead to the suspicion that it has disappeared, though it soon becomes again distinct.

Chronic roseola is not attended with febrile excitement, either before or after the eruption. It is sometimes developed by mental excitement, or any excess. It lasts for several months; and occasionally for a longer period. I was astonished to read the following in the work of M. Cazenave: "Roseola is one of the forms of syphilitic eruptions least frequently observed." According to my experience, on the contrary, it is one of the most common. This difference in opinion probably results from the difference in our fields of observation. M. Cazenave is attached to the hospital *St. Louis*, where patients enter long after they have become infected with syphilis, and at a time when roseola has disappeared, and no account is taken of it among the antecedents of the case. At the *Hôpital du Midi*, patients are admitted at an earlier period, so as generally to be treated for the first stages of syphilis. Then, when they remain for some time, the first appearance of the syphilitic eruption is observed. Now roseola occurs the first after the primitive accidents, at least in the majority of cases. It is therefore possible, that more cases of the kind are seen at the *Hôpital du Midi* than at the *St. Louis*.

M. Cazenave classes under the exanthematous syphilitic eruption, a *papular erythema*, which, in my opinion, and that of other writers on syphilis, has all the characters of the eruption observed after the administration of copaiba, and which quickly disappears on the discontinuance of this remedy. This is certainly improper.

Roseola is often blended with some other eruption; it frequently precedes the papular form, which seems the second stage of a consecutive affection of the skin. A very common accompaniment is an affection of certain mucous membranes, as of the throat, anus, vagina, prepuce, and glans.

SYPHILITIC PAPULAR ERUPTION.

At the close of the first chapter, I have spoken of papules which appear on the mucous membranes and adjacent portions of the skin. These papules are generally more or less large, confluent, and moist; they are also called mucous tubercles. Those under consideration are smaller and harder, they are distinct and dry, secreting no purulent matter; they terminate by desquamation or simple resolution. Fig. 2, plate 5, gives an exact representation of a syphilitic papular eruption. We there see elevations, some of which are larger than a pin's head, others the size of a lentil; their summit is covered with a little crust; all are surrounded by a copper-colored circle; they are scattered irregularly, some in

groups, others are isolated. They were particularly numerous on the anterior surface of the base of the chest, and on the abdomen. The patient was fifty-four years of age; and occupied Bed No. 4, Ward 12, of my service. It was preceded by an indurated chancre on the prepuce, which appeared on the 20th January, 1852, whilst the eruption first showed itself on the 19th of the following March. Papules may appear on all points of the skin, but they are more common on the back, shoulders, and nape of the neck. After an uncertain duration, they terminate, in the majority of cases, by resolution; they leave behind only a slight tawny stain at first, which gradually assumes the color of the skin, and finally completely disappears. Sometimes, and especially when large, they are covered, as it were accidentally, with a very light scale, which adheres but slightly. M. Cazenave has several times seen not only spots, but little, genuine cicatrices follow these papular eruptions at certain points, although these papules had not ulcerated, an occurrence which is, at least, very rare in the papular form of syphilitic eruptions.

Syphilitic Lichen.—This manifests itself in the form of very small pimples, which are often innumerable; sometimes they may be called confluent, and then they present a kind of brilliancy which, added to their coppery color, constitutes a very remarkable tint. According to Carmichael, this eruption often accompanies a blennorrhagia; it also appears almost always like certain acute exanthemata, that is nearly simultaneously, having been preceded by cephalalgia, lassitude, anorexia, and occasionally even with a little fever. Syphilitic lichen is ordinarily of short duration, that is, it may disappear in the course of a fortnight, by resolution. It may fade, and sometimes there is a slight, imperceptible desquamation, leaving only spots, which do not long continue. These, I repeat, are the ordinary characters, and this the ordinary progress of a syphilitic lichen; it may, however, pass under the same form into a chronic state.

Syphilitic broad papular Eruption.—The papules in these cases are preceded by small, yellowish, and very regular circular spots; they are always isolated, and distinct, and generally scattered over very extensive surfaces, which are successively invaded; sometimes we observe them of a firm consistence, very prominent, and of a decidedly copper color; at another point, we find little elevations already faded, less prominent, of softer consistence, and of a paler tint; on one side are yellowish spots with a rosy tint, which are in process of being converted into papules; on the other, they are of a grayish shade, more depressed than the latter, and the marks left by the papules which have disappeared. They are separated by intervals, at which the skin is of a peculiar earthy color, giving to the whole a very characteristic aspect.

These papules occur particularly on the extremities, shoulders, nape of the neck, very frequently on the forehead, and sometimes even on the hairy scalp. Occasionally the patient suffers pruritus, but it is always very moderate. Sometimes the papules are covered with pellicles, which never exist simultaneously at every point of

the eruption. The pimples often remain intact. This form constantly pursues a chronic course; it may continue stationary for several months, until the papules disappear by a slow and imperceptible resolution. They may be complicated with other venereal eruptions, or other consecutive accidents, such as secondary ulcerations of the throat, exostosis, or what is still more common, iritis.

SYPHILITIC SQUAMOUS ERUPTIONS.

The squamous affections of the skin are characterized by the formation of the gayish white, dry scale, which is more or less thick and adherent. In the syphilitic eruption, these scales are formed in a more or less elevated surface, which is of a dark red, or coppery color.

Syphilitic Psoriasis.—These patches occur on one or several regions of the cutaneous surface (pl. 5, fig. 3); there may be interspaces, or they may sometimes exist in close contact. Their breadth varies from that of a lentil to that of a franc piece, or it may even exceed this measure; they are more or less irregularly circular, and are elevated beyond the adjoining parts. They are covered with shining scales; when they become detached, the surface remains smooth and of a dark color. According to Biett, when this variety resembles *psoriasis guttata*, when the scales fall off, the patch is surrounded by an adherent white narrow border. This is of frequent occurrence, but not sufficiently constant as to establish a pathognomonic sign.

Syphilitic Lepra.—It is probable that this is the affection chiefly described under the name of *lepra nigricans*, and which by M. Ricord is called *syphilitic annular eruption.* The patches are perfectly circular, from two lines to half an inch in diameter, and generally of a deep brown or violet color, or even of a blackish tinge in their centre. Their edges form a circle more or less perfect, and are raised above the level of the surrounding parts. This circle is sometimes enlarged by the healing of the portions corresponding to the centre, and the development of these at the circumference. The color is here less dark than at the centre of the patches; but if the affection continues without an increase of its dimensions, the skin resumes its normal color in the centre, and the circles alone remain colored for a longer or a shorter time. In the majority of cases, these circles are formed by a tumefaction of the tissues, but there are those in which the scales are alone observed; then, in becoming detached, they leave beneath a circle which does not project, but which is simply a reddish narrow border. In other instances these circles are formed by more or less perfectly-developed papules in contact with each other, and whose summits are covered with crusts of greater or less thickness; the circle has then the appearance of honey comb. These circles meeting at different points, assume the form of the figure 8: when they are imperfect they are like the figure 3, or the letter S. This form is very common.

When syphilitic psoriasis and lepra affect the palms of the hands and the soles of the feet, which is of very frequent occurrence, the scales are thicker and harder, resembling horn (*syphilide cornée*), a fact which is explained by the nature of the epidermis in these regions. If, on the contrary, the skin be moist and contiguous to mucous membranes, as in the vicinity of the arms, the vulva, and the genito-crural fold, the scales are soft and pultaceous.

SYPHILITIC VESICULAR ERUPTION.

By the term *vesicle*, in cutaneous pathology, we understand an elevation of the epidermis, by a serous or a sero-purulent humor. When the latter is sufficiently abundant to produce a small tumor, it is called a bulla. Thus, we speak of the vesicle of eczema, and the bulla of pemphigus.

The vesicular form of eruption was, until recently, considered exceedingly rare, because it was not often observed, or to speak more properly, we did not know how to observe it. It assumes all the forms of the simple affections of the skin which are characterized by vesicles. Thus, we have an eczema, a *syphilitic herpes*, and a *varicelloid syphilitic* eruption.

The vesicular eruption occurs on almost every portion of the skin, but particularly on the neck, chest, and extremities, especially the superior extremities: it is seldom seen on the face, where venereal eruptions so often occur. It sometimes appears shortly after the primary accidents have disappeared; it happens even that it has begun before the latter have completely subsided. We know how rapidly the vesicles of herpes become discharged. The vesicular syphilitic are often complicated with other forms of syphilitic eruptions and with angina; and there are also pains in the extremities.

Syphilitic Eczema.—This variety appears under the form of small transparent vesicles, like those of simple eczema, but a little more elevated; they form irregular groups scattered in various places, and are surrounded by a coppery circle. At other times the eruption consists of patches of characteristic redness, not very bright, and covered with very large prominent vesicles of more than ordinary hardness, and which remain a long time unbroken and stationary; ordinarily the fluid of the vesicles preserves its transparency, or becomes but slightly turbid; they become faded, the areola or coppery patch is more tawny and gray, the fluid is absorbed, the epidermis subside, and there remains but a slight exfoliation, which contrasts ordinarly by the brightness of its narrow border with the peculiar tint of the skin first occupied by the vesicle. This is the progress of the most common form of syphilitic eczema.

M. Cazenave has described an *impetiginous eczema*. It consists of groups of vesicles which cover patches of very bright redness and of variable extent. These vesicles, at first transparent, are turbid, the fluid is sero-purulent; they become covered with crusts. There are successive eruptions which follow a similar course;

sometimes the vesicles rest on copper-colored patches; the scabs, of much greater thickness than those of simple impetiginous eczema, have the character of other syphilitic scabs; they are black, conical, furrowed, thick, and adherent. M. Cazenave once observed the crust covering the ulcerations of a perpendicular form, and of such depth, that they left behind so many depressed cicatrices. "This disease," he remarks, "had lasted for several months, always retaining the same unmistakable characters, and nearly always presenting at the same time each of the lesions I have mentioned. A number of depressed cicatrices were left, which covered the whole anterior surface of the abdomen."*

M. Rayer observed a remarkable case of syphilitic eczema, and the following is an analysis of his report: "The eruption was seated on the fore-arm. There were small irregular groups nearly the size of a dime (American) piece, consisting of small reddish elevations, not pruriginous, and of the size of a pin's head; they contained a turbid or opaque matter. The vesicles were more prominent, globular, and as voluminous, than those of *simple* eczema. They were smaller, less transparent, and disposed in more irregular groups than those of herpes. Their reddish and slightly livid hue served to distinguish them from the pustules of impetigo. At other points were to be found little circles analogous in form and size to those of rubeola. In some of these groups several sunken vesicles were replaced by a slight exfoliation of the epidermis, distinctly presenting at several points a narrow border which indicated the size of the vesicles. Wherever the exfoliation had just commenced, there were spots having completely the hues of ordinary syphilitic maculæ. Finally, this eruption differed from psydracious pustules in this, that the elevations in the latter were more voluminous and acuminated, and are commonly followed by crusts and sometimes by cicatrices.†

Syphilitic Herpes.—Here we have vesicles arranged in circles, as in herpes circinnatus. The breadth of these circles varies from that of a fifty-centime piece to that of two francs. Syphilitic herpes, besides the antecedents and other concomitant lesions of the same nature, is characterized by a coppery tint of the portion of the skin occupied by the circles, a tint which at a later period becomes of a grayish hue. These circles are not very numerous, and are widely separated, since the eruption may simultaneously occupy even one or two regions, and be represented by one circle only. As I have already stated, I have seen a case where the herpetic circle occupied partly the root of the penis, and partly the scrotum. It is not unusual to observe this in the other syphilitic eruptions. M. Cazenave has described a syphilitic herpes which corresponds to a variety of simple herpes. The discs are most frequently very small and numerous. They occur principally on the chest and on the extremities. On their first appearance they may be covered by a pea, whilst at a later period

* *Traité des Syphilides*, p. 253 et suiv.
† Rayer, *Maladies de la peau*, t. ii., p. 384.

the circle may so enlarge as to equal that of the preceding variety. The vesicles are also very small, and become rapidly desiccated, a circumstance which sometimes leads to their being undetected. These patches may be mitaken for squamous discs, if with a glass or a practiced eye we do not discover numerous points surrounded by epidermic *debris*, and disposed in circles. To these characters may be added an inflammation of the area, which seems elevated by a liquid which is speedily absorbed, and a scale sometimes sufficiently large to fill the circle. According to M. Cazenave, this is the most common form of the syphilitic vesicular eruption. If it had not been described, it is because it has at times been confounded with eczema and pityriasis. As the discs are here very numerous and scattered over large surfaces, the syphilitic tint is very decided.

Syphilitic Varicella.—The vesicles here resemble the pimples of varicella. This is one of the rarest forms of the syphilitic eruptions. The vesicles appear at one point, rapidly discharge, desiccate, and reappear at other points. Sometimes there is a well-marked coppery red circle, sometimes a very narrow border, and sometimes an entire absence of redness around the vesicle. The more I reflect, the more I am convinced that it was not this form of syphilitic eruption which occurred on the first patient on whom I first inoculated the secondary accidents. This case I shall soon relate; I called it *syphilitic ecthyma* in my report to the *Société de Chirurgie*. But it will be remarked, that in my description of the characters of the eruption, I have observed that the principles resembled those of varicella. We know, moreover, that by some writers varicella has been ranked among the pustules. There was in my wards a patient, who was attacked by variola (for it is not uncommon to find variola where we find syphilitis). Soon other patients became affected with analogous eruptions. Two patients who had had chancres were seized with certain general symptoms analogous to those which are ordinarily observed in eruptive fevers. Then pimples appear strongly resembling those of varicella. They were smaller, and surrounded by a reddish-brown narrow border. One of these patients would leave the hospital during the first stage of the eruption, and I lost sight of him. I was able to watch the other; the vesicles remained for a long time, much longer than those in ordinary varicella, and afterwards an ecthyma with large pustules followed, particularly on the legs. The syphilitic varicella may be inoculated, as proved by the following observation:

———— æt. 26, of a lymphatic temperament, had several years since a chancre, which, when healed, left a little induration. Two months after the chancre had disappeared vegetations appeared on the glans; these were excised and cauterized. No other consecutive accident supervened; the patient pursued no general treatment. Five years ago he contracted a blennorrhagia which was complicated with orchitis, and which required five months for its cure. About five months since he had another chancre which rapidly cicatrized without leaving any induration. Four or five days after

the cicatrization of the chancre buboes appeared in the groins. The patient then entered the hospital of Toulon, where a mercurial treatment was administered, but he left the hospital at the end of twelve days, and discontinued the treatment. The tumors in the groins continued in an indolent state. About twenty days after he left the hospital he discovered an enlargement of some of the cervical glands; six weeks later very large pustules, full of pus, appeared on both arms and thighs. The patient entered the *Hôpital du Midi* on the 22d October, 1849. He was immediately placed under the influence of mercury. He took pills of corrosive sublimate for six days, when the pus from the pustules was inoculated. These pustules resembled the *large pustules of varicella.* The pus was taken from two different pustules on the left wrist. These pustules were intact. Two punctures were made on the internal surface of the thighs, one on each side. Two pustules, perfectly resembling those which had furnished the pus, were speedily developed, and four days after the inoculation pus was taken from the pustules thus produced, and inoculated on the internal and superior surface of the thigh. Two pustules similar to the others followed this second inoculation; all of the pustules thus produced corresponded perfectly with those which were spontaneously developed. The patient took one hundred and eighteen pills. For eight days past he has taken fifteen grains daily of the iodide of potassium; but a single pustule remains over the annular ligament of the left hand, and a slight engorgement in the left groins. He asked for his discharge fifty-six days after his admission.

I would add, that I have never seen pustules so rapidly developed as were those which followed the first inoculation. It will here be remarked that seven years had elapsed since he was affected with the indurated chancre on the penis, and that the other symptoms which had been manifested on that organ had long since disappeared. In conclusion, no primitive accident existed when the inoculation was performed. No doubt can therefore be entertained in regard to the inoculation of certain secondary accidents, and shortly afterwards I undertook some experiments, all the details of which will be found in the paragraph on the syphilitic pustular eruptions. It will then be seen that a secondary accident was inoculated from one man to another, and from the latter to a sound man.

SYPHILITIC BULLÆ.

The elevation of the epidermis is here more considerable than in the vesicular variety. These tumors are called *bullæ*, they are regularly circular, and vary in size from a pea to a goose egg. I shall describe both forms, *pemphigus*, and *rupia.*

Syphilitic Pemphigus.—This is not described by every writer on syphilis. It must be very rare in the adult, for I do not remember having seen more than two patients at the *Hôpital du Midi* in which this eruption could be traced to syphilis, and these two had had chancres and roseola. Having made no note of these cases, I can

speak of them only from recollection, which is too imperfect to render them of value. But there is at present, in the paying department of the hospital, a patient who presents three bullæ or eruptions, in the form of pemphigus. The following are the particulars of this case:

T. (Claude,) æt. 24, a cooper by trade, temperament sanguine, constitution good, admitted into room No. 5, on 19th September, 1851.

Aug., 1850. Two chancres, of from twelve to fifteen days' standing, were cauterized on the fourth day with nitrate of silver. In the month of August, 1851, a bubo in the left groin was opened by a chemist with caustic potash. There existed also an excoriation at the margin of the anus, which the patient attributed to habitual constipation. Simultaneously with the bubo, there were crusts of impetigo on the scalp, ears, and whiskers. Rheumatic pains chiefly in the lower extremities. Throat sound.

At the moment of admission, there were crusts of impetigo on the head and eyebrows; a scar in the left inguinal region, the result of the potash; excoriations in one of the anal folds. The patient states that he is subject to constipation, and to a hemorrhoidal flux, which has many times been followed by ulcerations, resembling that with which he was actually affected. The rheumatic pains are not increased by the warmth of the bed. On the left side of the thorax, about on a level with the ninth rib, there is a recent cicatrix, of an oval form, and of a coppery-red color. (Plate 5, fig. 4, last spot.)

Monday, Sept. 22d. On the left hand, on the dorsal surface of the fifth metacarpal bone, the epidermis is slightly elevated by an opaline serum. No pains.

24th. A bubo of pemphigus has appears; it has the breadth of a half-dime piece; it is filled with a sero-purulent fluid, and is surrounded by a red areola. (Plate 5, fig. 4.)

25th. The bulla has burst; in its place is seen a coppery-reddish spot, which is dry, and a little elevated; in its centre there is a small whitish point. (Plate 5, fig. 4.)

26th. During the night, the bulla, which had formed again, again burst; the red spot on which it was situated is distinctly circumscribed, hard, and not painful; its coppery hue is more distinctly marked. The patient would leave the hospital, and he was not again seen.

I would here remark that this patient was young, robust, plethoric, and strong.

According to the researches of Professor P. Dubois, syphilitic pemphigus has been especially observed among infants. Krauss studied this disease as it is met with in children, but he did not regard it as syphilitic. M. Dubois asserts that it may assume this character, and M. Cazenave, who has seen many children at the professor's clinique, is of the same opinion. M. Depaul has most commonly observed foci of engorgement in the lungs. In a memoir which was read before the Academy of Medicine, this honorable *confrere* maintained that this pulmonary lesion was related to pemphigus; in other words, that these engorgements were like

those of the skin of a syphilitic nature. M. P. Dubois defends the opinions of M. Depaul. M. Cazeaux is opposed both to M. Depaul and M. Dubois. According to M. Cazeaux, there is no proof of the syphilitic nature of pemphigus and pulmonary engorgements, in the double lesion which is found in infants. As to syphilitic pemphigus, it is but little known, having never been positively seen in the adult; in the infant it may depend upon a state of debility. As to the engorged foci found in the pulmonary parenchyma, they are also met with in the fœtus, which cannot be suspected of being affected with syphilis. Thus, according to M. Cazeaux, the previous existence of syphilis in the parents would be no positive proof of the syphilitic nature of pemphigus and of the pulmonary lesions in the child. To establish this, it must have been observed at other periods of life, and the pulmonary lesions must have special characters, characters which differ from those where the lesions are developed under other influences, as, for example, cold. M. Dubois replies, that children born with pemphigus, or in whom it appears shortly after birth, have the aspect of old people, as is always the case in congenital syphilis; nearly all of them die, and, in the majority of cases, we find proofs of previous syphilitic infection on the part of one or both parents. As to pemphigus, it is indeed rare, still it has been observed. An excellent example is represented in the *Iconographie* of M. Ricord, and I have mentioned another.

More recently, Professor Dubois has reported to the Academy of Medicine the case of a woman completely infected with syphilis, who gave birth to a child affected with pemphigus; it died, and at the autopsy engorgements were found in the lungs, and portions infiltrated with blood. I repeat, syphilitic pemphigus has been seen in the adult. It must, however, be confessed, that the question is not yet absolutely settled. But a practical question constantly arises, to which it were well a solution might be given. When parents have given birth to children who die with pemphigus, should the parents be subjected to an anti-syphilitic treatment? Should one of them exhibit marks of syphilis, there can be no question as to the course to be pursued; the person affected should submit to treatment. But, must the same course be pursued when both are free from all symptoms of the disease? If the lesions in the child are really of a syphilitic character, it is sufficient evidence that the parents should be subjected to treatment. Thus, we find that the question is constantly recurring. Now, as it cannot yet be decided, in a practical point of view, we should obey the dictates of common sense. It may then be asked, is the treatment to which the parents are required to submit, to prevent the infection of the child *in utero*, attended with danger or serious inconveniences. Now, it is established that when mercury and iodine are prudently administered, they give rise to no accidents, or but to slight inconveniences. The anti-syphilitic treatment then should be cautiously employed, and adapted to the circumstances of the parents. I shall return to these questions when we come to treat of *infantile syphilis*.

Syphilitic Rupia.—This is characterized by large bullæ, which are but little distended, perfectly round, and surrounded by a copper-colored areola. These bullæ contain a darkish-colored humor, which speedily dries, leaving a blackish crust, which is thicker at the centre than the circumference. A violet-colored circle surrounds these conical crusts, which ulcerates, and always exceeds the extent of the bulla that preceded it. Beneath these crusts are perpendicular ulcerations, which are sometimes of considerable depth.

The bullæ of rupia are observed on all parts of the body; they vary in number and dimensions; they are generally few in number, and scattered irregularly over different parts. There may be six or eight, and sometimes from twelve to twenty in number. The smallest rapidly pursue their course, whilst the larger are more protracted in their progress. In very rare cases, they are widely and in great numbers scattered over the surface of the body; they are all of nearly equal volume, and resemble ecthyma, from which, however, they differ in their extent, the conical form of the crusts, and their elementary lesion, although, as in the circumstances there is no great difference between the pustule of ecthyma and the bulla of rupia, the latter being more extensive and superficial, and does not completely cover the diseased surface like the pustule of ecthyma. (Cazenave.) Syphilitic rupia may consist of one or two bullæ only, situated more particularly on the extremities; they are then of considerable dimensions, which is increased by the progressive ulceration at the base of the crust. Cicatrization may take place at certain points, and especially at the centre, whilst at other points the ulcer is covered with crusts, principally at the circumference, where they seem to be maintained by the succession of several isolated bullæ, and when the ulcer assumes a phagedenic form.

The gravity of syphilitic rupia is in proportion to the debility of the subject. It is rarely complicated with other symptoms. Its progress is always slow. Its cicatrices are indelible, retaining the circular form of the ulceration, and preserving for a long time the characteristic impress of syphilis. These cicatrices sometimes degenerate, and give rise to what Alibert denominates Keloides. Reparation is manifested by a drying of the crusts, and fading of the circle, at which point a lamellar exfoliation occurs. Plate 6, fig. 2, represents a rupia on the superior extremity; reparation has commenced. The crust is divided into several fragments. We see the lamellar exfoliation. Pressure with the finger on the summit of the crusts produces no discharge of serum. On percussion, they yield a dry and clear sound. The crust falls off in fragments, permitting us to observe successively more considerable portions of the cicatrix.

SYPHILITIC PUSTULAR ERUPTION.

These consist in small tumors formed by the accumulation of a purulent humor on the surface of the dermis by which the epider-

mis is elevated. After M. Cazenave, I shall describe a *syphilitic lentigo*, an *impetigo*, and an *ecthyma*. This is an important section, as we have here to consider a form of the secondary accidents, attended with the formation of pus, in other words, with the circumstances most favorable to propagation by inoculation.

Syphilitic Lentigo.—According to M. Cazenave, this is the most common of the pustular eruptions: it is the most frequently mistaken. The pimples are distinct, isolated, of the breadth of a small lentil, slightly prominent, of a very decided characteristic color, imperfectly suppurating, and terminating by a small cicatrix, much smaller than the pustule that has preceded it. It may occur on all parts of the body; it is disposed irregularly, and differs somewhat in form according to its situation. On the face, chest, and back, it strongly resembles acne; but its pustules are larger, more circular, and prominent; in certain parts of their extent, they suppurate, when they become covered with a crust, which is sometimes very thick, and which, when it falls, leaves a very broad, depressed cicatrix, that remains for a long time like the base of a tubercle. On the extremities, we find the pustules flattened, particularly at their base, which is broader, and not so perfectly circular as in the preceding case. These pustules, of a coppery hue, and a bright red color at the commencement, appear in the form of a small lentil seed. The spot which first appears is sometimes painful; and evidently presents a slight elevation; the central point becomes prominent; and we soon perceive, completely on its summit, a very small collection of pus, which disappears after one or two days, either by absorption, which is most rare, or by a rupture of the summit, or by the formation of a slightly-adherent crust in the place of the coagulated humor, which crust soon becomes detached. "Whatever may be the cause, the pimple has assumed another aspect; it now appears as a small, copper-colored papule, which somewhat resists the pressure of the finger, presenting at its summit a small depressed cicatrix, which is sometimes completely perforated in the centre, and which, particularly for some time, is surrounded by epidermic *debris*. As the eruption advances, it loses more and more its pustular character; at first view, it is called a papule, though it has several decided features, which should prevent such a mistake. This eruption, moreover, is for a long time kept up by the appearance of new pustules, so that it is easy, in the majority of cases, to observe the different stages already mentioned. This is the variety of syphilitic pustules which is the most commonly mistaken; a fact which explains why, in the view of certain pathologists, the syphilitic papule is regarded, though certainly without foundation, as one of the most frequent forms of the disease." (Cazenave, p. 286.) I will not deny the errors in diagnosis committed before the investigations of M. Cazenave; but, even after having profited by his researches, I must still regard the papule as one of the most common forms of the syphilitic eruption.

Syphilitic lentigo always pursues a chronic progress; its pustules, always distinct, never ulcerate; they terminate by an indu-

ration of the base, which finally subsides, leaving a completely indelible central cicatrix.

Syphilitic Impetigo.—This assumes two forms: one very simple, corresponding to the vesicular variety, in the form of varicella (lesion nearly vesicular); it is the *impetigo non confluent* (pl. 6, fig. 3, the first pustules). Here the pustules, somewhat voluminous, remain isolated, or if confluent, it is the result of accident, and only two or three are involved. A bright coppery-colored spot at first appears, followed by an elevation of the epidermis which completely covers this spot. The base of the pustules is not indurated, and they form so many small tumors filled with a purulent fluid; they are generally in close proximity, without, however, coming into actual contact, and are surrounded by a reddish circle. It is rather in the skin by which they are separated, than in the distinct areola of each, that we observe in the commencement that peculiar tint which becomes more and more decided, as the eruption advances. This tint passes into the state of a macula at the points first occupied by the pustules.

The non-confluent impetigo is preceded by general symptoms of indispositions, languor, lassitude, &c. The eruption may appear at once over a great extent. Generally, notwithstanding the appearance of a very acute state, if the pustules are not accidentally broken, they may remain for several days unaltered. The liquid, however, which they contain, becomes coagulated, forming a brownish crust, larger than the pustule, a crust which in the majority of cases, becomes drier and drier, and falls only to leave behind a cicatrix (pl. 6, fig. 3, shows the pustules accidentally opened). Sometimes the pustules enlarge, the liquid becomes more abundant, and the epidermis is elevated to a greater extent; then several pustules may be confounded in a single scab, which, moreover, is always of small size; but then this scab may also cover a superficial ulceration, it is true, but which leaves a cicatrix more extensive and more depressed than that of the pustule which has passed through its different stages.

Confluent impetigo has always been called the *pustulo-crustaceous syphilitic eruption.* It is produced by the union of a great number of pustules. Ordinarily preceded by indisposition, and even by febrile excitement, it may commence by a more or less lively redness of the skin, which is also evidently tumefied. Soon the red part becomes covered with small purulent collections, which are so much the more rapidly confounded together, as they are situated on an inflamed surface. These pustules remain intact for a very short time only; soon one or more large patches appear surrounded by an extensive copper-colored areola, and covered with crusts not very prominent, unequal, of greenish color, soft, at least in their earliest stages, convex at their centre, and encased at their circumference in a soft inflamed tissue, indicating the existence of suppuration. Beneath these crusts, indeed, are grayish superficial ulcerations, with slighty-elevated borders, which secrete a sero-purulent fluid, thus forming a new crust. As the disease becomes modified, the crusts become

more and more desiccated, their circumference consolidated, and they are detached by degrees at their edges; finally, they fall completely, and commonly leave an extensive and more or less deformed cicatrix, according to the number of the newly-formed crusts.

This variety may be observed simultaneously at many points; it first appears under the form of distinct patches; but, unlike the serpiginous form, it has no tendency to invade the adjacent parts. In its first stages, it is of the size and volume which it should maintain throughout its course. If at each renewal of the crusts, it increases its dimensions, it is always within very narrow limits, as we also find after it cicatrices of greater or less breadth, at different points, near or remote from each other; but we never find those long tracts where the skin is ulcerated uninterruptedly and to a considerable extent.

Syphylitic Ecthyma.—This is formed by small isolated tumors, having a base of a certain consistence, and a rapidly-formed crust, which leaves behind a cicatrix, sometimes very superficial, sometimes very profound. There are two well-marked forms of ecthyma, one of which resembles more the pustules of variola in their early stages. These pustules are broader than those of impetigo; they do not, however, exceed in diameter that of an American half eagle; they are of a circular, slightly-conical form, sometimes a little umbilicated, and surrounded by a coppery areola. These pustules are rapidly developed, and scattered at once over a more or less extensive surface of the body, the extremities, sometimes appearing very shortly after the primary accidents. They are filled with a yellowish fluid which readily escapes, forming a brownish crust, which adheres but slightly (pl. 6, fig. 3). At the end of one or two weeks these crusts fall, leaving a spot, sometimes a cicatrix, but superficial and central. This is the acute ecthyma, and may likewise be called the superficial, and is the form, in my opinion, which may be most readily inoculated. It will be seen that the patient which furnished me the pus which I used for this purpose with success, was effected with an ecthyma belonging to this first and rarest form. With it we may observe other lesions belonging to the first stages of syphilis; thus, chancre may still exist, but this is of rare occurrence; there may be mucous tubercles, and rhagades in the region of the anus.

In the second form of ecthyma, that which in comparison with the former may be called chronic, and deep, the pustules are of greater breadth; they may have the diameter of a five-franc piece, but they are generally oval with their greatest diameter in the direction of the axis of the limb on which they are seated, for these pustules are ordinarly observed on the extremities, particularly the inferior extremities, as the legs. They are not numerous, and do not appear simultaneously. Sometimes there is an interval of some months between their eruption.

The pustule in this variety is preceded by a violet-colored spot, the epidermis is raised at the centre, and then soon forms a collection of thick fluid, which seems a mixture of pus and clotted

blood. Immediately around this focus there is a livid areola, itself surrounded by a copper-colored border. External to the points where the epidermis begins to rise, is a tumefaction which causes the centre of the tumor to appear depressed. When the pustule bursts, the contained matter partly escapes, whilst that which continues to be secreted forms a black crust, which gradually desiccates and at length resembles an eschar. This form of ecthyma likewise resembles, to a certain extent, the bulla resulting from the application of an escharotic. If the crust be early removed, an ulcer with a grayish base follows, with perpendicular edges, around which is a whitish border, formed by portions of the epidermis which separate the crusts from the circumference of the ulcer.

Instead of removing the crust we leave it to fall spontaneously under the influence of progressive reparation, we perceive that this crust continues to become desiccated; it seems to contract and to sink down at the centre. The epidermic border to which we have alluded, falls off in very small layers, and permits us to observe the circumference of the crust which seems to penetrate the thickness of the skin. Finally, portions of the crust become detached at the edges, then they break towards the centre, and when separated, a more or less circular and depressed cicatrix remains, with a syphilitic hue.

This is more common than the preceding variety; it is more grave, and is often observed after the appearance of other secondary accidents, after other syphilitic eruptions, such as roseola, papulæ, and sometimes after iritis. With, or shortly after, the manifestation of this form, we observe the affections of the osseous, fibrous, and parenchymatous tissues. We find therefore, that the same eruption may be sometimes secondary, and sometimes tertiary, or much nearer to the former than the latter accidents, thus presenting us with another argument against arbitary divisions.

Further still, between the first and second varieties which we have described, there may be an intermediate variety. The pustules then, instead of being distinct, as in the first variety, exist in groups, are confluent at certain points, and form a broad crust, which strongly resembles that of one of the forms of impetigo; instead of leaving scarcely any trace behind as in the first variety, or a well-marked and regular depression as in the second, an irregular cicatrix remains more distinct than in the first, and less so than that in the latter form, for this intermediate variety is always a superficial ecthyma.

Inoculation of Syphilitic Ecthyma.—I was the first in France to show that the so-called secondary accident might be transmitted not only by contagion, but by experimental inoculation. My experiments date from 1849. In speaking of syphilitic varicella I have already reported a case of inoculation from a diseased to a diseased person. This report forms part of a Memoir which also contains the two following cases, which we are about to relate. This Memoir was read before the *Société de Chirurgie*, and was published in the *Gazette des Hôpitaux*, of 18th and 22d Feb., 1851. As I had truth on my

side, and as I knew that some of the best minds in Germany had already confirmed my experiments, and that in France experiment would soon decide in my favor, I was guarded in what I wrote or spoke. I did not reply to all the objections which were brought forward in the Society and published in the journals, but left the facts to speak for themselves. The following is a report of the case that gave rise to the most excitement. It is one of the inoculation of ecthyma from patient to patient in the first place, but afterwards from the latter to a sound person. It presents two principal features; 1st, the phenomena manifested by the patient who furnished the matter for the inoculation, and who was also seen by MM. Piberet and Lafargue, *internes* of the hospitals in Paris; 2d, the phenomena presented by the sound person who was inoculated, and which have been reported by himself.

CASE 1.—*Inoculation from patient to patient, and from the patient to a sound person.*

A servant, æt. 23, of *bilious-sanguine* temperament, was admitted at the *Hôpital du Midi* on the 28th October, 1849, and occupied bed No. 30, Ward 11. Had always enjoyed good health, and was born of healthy parents. Six weeks since he had a chancre on the right side of the frenum; this is now cicatrized, and only a slight induration remains. Eight days after it had healed the patient suffered from itching about the anus, which subsequently became completely surrounded by mucous tubercles. Rhagades exist in the mucous folds. Simultaneously with these phenomena, appeared an eruption on the skin, which was preceded by redness on the surface; soon followed *little pimples*, papules, and three or four days afterwards, pustules. This eruption was preceded by febrile excitement. The diameter of the pustules varied from that of a lentil seed to that of a half eagle (American) piece. They commenced on the head, and became irregularly scattered over the trunk and extremities, and were particularly numerous on the right side of the chest. The inguinal and cervical glands were enlarged. The circumference of the anus is covered with mucous tubercles; there are rhagades, and a fetid puriform discharge. *No infundibuliform disposition.* The patient is tormented with supra-orbital cephalalgia, which increases at night, and continues very intense until morning. Severe pains are felt in the shoulder joints, as well as in those of the lower extremities. The head is covered with crusts, which are easily detached. It has been stated that the pustules existed in greatest number on the right side of the chest; there were also some on the abdomen. Altogether, there are thirty well-marked pustules on the trunk; they are more distinct on the upper, and on superior and anterior parts of the lower extremities. The broadest are on the chest. All are surrounded by a coppery-red circle. All contain pus; most are covered with a crust, the color of which varies; some are dark, others white, others squamous and adherent; others, in fine, are of a yellow color, more or less distinct. All are surrounded by a circle, the color of which has already been mentioned, and are seated on a tissue somewhat tumefied. Some of the pustules are covered by a grayish crust, and

seem to be of more recent development; they fill with well assimilated pus.

On the 28th October, 1849, punctures with a lancet charged with pus from one of these latter pustules, situated on the right side of the chest, were made on the inferior and internal part of each thigh of the patient. On the 29th, an elevation appeared at the points punctured, which gradually assumed the characters of the pustules on the trunk. Matter was taken from the inoculated pustules, and inserted into the upper and inner surface of the thighs. The same results followed as in the first inoculation.

Nov. 1st. M. Boudeville, *interne in pharmacy*, who had never had the slightest venereal symptom, and who had an excellent constitution, offered to submit to the inoculation. Matter was taken from a pustule on the left side of the thorax of the above-mentioned patient, a pustule which had never ulcerated, which was completely intact, and covered only with a grayish crust. With a clean lancet charged with this pus, inoculation was made on the inferior part of the palmar surface of the left fore-arm of M. Boudeville; with pus from another pustule in the same region, and as recent as the former, inoculation was made on the right fore-arm.*

The patient, who entered the hospital on the 21st of October, 1849, I could not prevent from leaving on the 24th November of the same year; however, he had been examined for nearly a month by the students attached to the hospital, by those who followed my service, and by the members of the German Medical Society, among whom was M. Robert de Weltz. MM. Surmay, and de Castelneau were invited to visit and to examine both this patient and the student of pharmacy. As I foresaw that this case would make some noise, it was my wish, as may easily be understood, that the patient should himself note the circumstances of his case. I therefore requested him to keep a record of what passed. But as it was also my opinion that a student in pharmacy could not be competent to fulfil all the conditions required of a medical observer, I myself watched the effects of the inoculation. The following is the student's report, unaltered:

"On the day following the inoculation, the 2d November, traces of inflammation began to appear. In the evening I felt dull pains analogous to those accompanying suppuration.

"On the 3d, a papule of about four-fifths of a line in diameter, occupied the centre of the red circle; until the 5th November this papule remained stationary. The inflammatory circle followed the same course, and extended some trifling distance beyond it; the papule now became remarkably convex and covered with a cracked,

* It is important that the reader take note, that matter for the inoculation was taken from three different pustules: 1st. From the right side of the thorax, to inoculate the patient himself; 2d. From the left side of the thorax, to inoculate the left fore-arm of the student; 3d. From the same region, to inoculate the right fore-arm of the same student. So that, if it be pretended that the matter used for the inoculation was taken from a chancre, we must admit the existence of three chancres on the thorax, and, as a matter of course, the other pustules scattered over the body, exactly resembling those on the chest, must all likewise have been chancres!

grayish crust, and beneath this crust was a thick, grayish-white pus, clearer throughout than that used for the inoculation. This pus was several times discharged in consequence of the friction of the linen against the pustule, but it was immediately reproduced.

"At every period of the eruption I suffered severe local pain, which sometimes extended along the arm. I discovered no symptoms of general disturbance.

"During the first eight days I perceived a *kind of circular* inflammation, surmounted by a small papule which broke out on the external and superior surface of the thigh; it disappeared in the course of four or five days. It is probable that at this part of the thigh there *was seated* a pimple chafed by the clothes, and that during my sleep, the fore-arm having been brought in contact with it, took up a small quantity of the pus, which gave rise to a pustule.

"Towards the 15th of Nov. the inflammation ceased; the pustules subsided and cicatrized; their surface soon became flat and laminated; the puncture made by the lancet left an infundibuliform scar of a brownish-red color, and presenting whitish scales, like those of lichen.

"Such was the condition of things until the 5th of December, thirty-five days after the inoculation, at which time a change occurred; an inflammation supervened, and two consecutive pustules appeared occupying precisely the situation of the first, and I suffered only a severe pain *in the same locality.** Pressure, even at a considerable distance, produced intense pain.

"The cicatrization was here very slow on account of the very copious suppuration, especially in the pustule on the right arm, which had been irritated by one of the pins used in the dressing. Cicatrization was not completed until the 20th Jan. 1850.

"M. Vidal, *on the first cicatrization,* advised me to submit to treatment. This advice I did not follow, thinking that the experiment was not sufficiently conclusive from the manifestation of local phenomena only, and I determined to await the development of symptoms of general infection before I subjected myself to treatment. Up to the present time, March 8th, 1850, one hundred and twenty-eight days from the date of the inoculation, no symptom of general infection has appeared.

"This report is handed to M. Vidal, March 28th, 1850.

"BOUDEVILLE."

Such is M. Boudeville's account of the symptoms produced on his own person, and which may be regarded as the result of general infection. The following is the report presented to me by the student in pharmacy on the 10th August, 1850:

* Thus the first pustules, those which immediately followed the inoculation, lasted about fifteen days; and about twenty days after their complete cicatrization, pustules appeared spontaneously much smaller than the first, and, as M. Boudeville goes on to say, they lasted forty-five days. As to the seat of the second pustules, it is necessary to be precise on this point; the first were in the middle of the anterior surface of the fore-arm, the second appeared a little nearer the border of the radius at a point on the circumference of the first, with the cicatrices of which they became confounded.

"Flat lenticular tubercles appeared on my scalp, a posterior and superior cervical ganglion became enlarged, and finally there was alopecia. About the 25th of April I experienced some difficulty in swallowing, and the mouth began to inflame; a roseola appeared on the body which lasted for three or four days, and finally mucous tubercles became developed on the pillars of the palatine arch. Then, for the first time, I submitted to mercurial treatment. At first I took but one pill of the proto-iodide of mercury; but rheumatic pains and nocturnal cephalalgia induced me to take two, three, and afterwards four a day. The pains having subsided, I gradually reduced the number to one a day, which I still continue to take.

"The mucous tubercles in the mouth are now cicatrized; a brick-colored tint remains in a circle completely arrested, and in which the pustules were formerly seated.

"No other symptom has appeared.

"CH. BOUDEVILLE.

"*Paris, August 22d*, 1850."

I repeat that this case should be examined under two different points of view: 1st. The details concerning the patient, whose body was covered with pustules; these were collected by MM. Piberet and Lafargue, *internes* of the hospitals, and who are still in Paris, whose education and character are known to several of the chief physicians in the hospitals of Paris. This part has not been, nor can it be, directly attacked. 2d. The details in the second case were furnished by the student in pharmacy who was inoculated, which, when taken in connection with those given by other persons, seemed to show a contradiction with the first.* Hence arises an obscurity as regards this second part of the case which it has been attempted to cast over the whole so as to destroy its value. But the conclusion of M. Boudeville's report has not been attacked; it is that which establishes the fact that a student in pharmacy has been infected with syphilis from inoculation performed by myself. Thus, two points are incontestably established. 1st, that the patient who furnished the pus had secondary pustules, and that it was from these pustules that I procured the matter with which I inoculated the student; 2d, this inoculation produced constitutional infection (*la verole*). For my own part, I have no doubts on the subject. The question is settled, for I have not to prove the possibility of transmitting such or such a form of syphilis, but of one of its forms. Now I have transmitted constitutional syphilis. The nature of the lesions produced on both fore-arms

*The discrepancy found in the *second* case of M. Boudeville, consists in the report of a glandular enlargement in the axillæ during the existence of the pustules on the fore-arms. Now, at page 357 *et suiv*, it will be observed, that in the *first* case of this student, dating March 29th, 1850, when the extremities were no longer affected, nothing indicated this glandular enlargement which M. Ricord had already noticed in this student! I have besides proved, in several parts of this work, that adenitis is of no particular value in forming a diagnosis. In this case the enlargement of the axillary glands might have been the result of the general infection. Of course, in a work like the present, I refrain from commenting upon the conduct of persons.

of the student have been called in question. It is pretended that they were chancres. This is of but little consequence. The question, I repeat, is not whether a secondary accident may transmit an identical form of disease, but whether it can transmit any form of syphilis. If the student had had at first two chancres on the form-arm, this would prove that with the matter from secondary ecthyma we may produce chancres, a fact which would still more compromise the doctrine of my opponents. But there was nothing of the kind, for we see the pustules which immediately followed the inoculation of the student, lasting for fifteen days; they afterwards *completely* disappeared, and twenty days after this disappearance, this complete local cure without any traces being left, they re-appear spontaneously, in the absence of any exciting cause, and the pustules are larger than before. These pustules lasted for forty-five days; they appeared not exactly at the centre of the cicatrix of the first pustules, but at a point of their circumference. Is such the course of a chancre? No; when the reparation of a chancre is once complete, it is not reproduced. Before another chancre can appear, there must be another inoculation. This is the doctrine which M. Ricord in particular professed. Besides, I have already remarked that I was not satisfied to trust the entire report of the case of the student himself. I myself watched its progress.

Further still, in so important a case I was desirous of having the opinion of a colleague versed in such matters. I therefore took this student to M. Cazenave, of the hospital *St Louis;* I consulted him as to the nature of the pustules and the treatment best to be pursued. M. Cazenave, after a careful examination and without any previous instruction on our part, declared that the pustules on the fore-arm of M. Boudeville were *two syphilitic ecthymatous pustules, that he was fully satisfied on this point, and he advised a mercurial treatment.* It was not until then that both *M. Boudeville and myself* declared that these pustules were the result of inoculation with the pus taken from *two ecthymatous pustules* on a patient in the *Hôpital du Midi.* This led M. Cazenave himself to experiment, and shortly afterwards he published a case of successful inoculation with the matter of a syphilitic ecthyma.

But it was not sufficient to have myself proved the inoculability of secondary accidents; it was not enough to see my experiments confirmed by writers on syphilis, who it was supposed coincided in my opinions, stronger evidence was required, and it was necessary that experiments should be undertaken by those whose sentiments were in sympathy with my opponents. In this point of view, the report of the two following cases is possessed of great importance.

Being under the necessity of taking a journey to the South, my colleague, M. Puche, was willing to take charge of my service, and made the following experiment, the details of which were carefully collected by my former *interne*, M. Duménil.

Case 2.—Ward 11, bed No. 26; admitted 30th October. Temperament sanguine; constitution very robust; *embonpoint* con-

siderable. Aged 24 years. Fifteen months before, this patient had had chancres. He was treated by M. Vidal, at the office of consultation, at the commencement of his disease, and took but twenty mercurial pills. The chancres were cauterized by another physician. He never had any glandular enlargement more decided than that which now exists. During the first weeks of the existence of his chancres, he had sore throat, but he was subject to this before. No rheumatic pains; no cephalalgia, no alopecia. In the left groin is a superficial gland somewhat enlarged and indolent. The patient declares that it has always existed. Behind the right sterno-mastoideus is a gland very much enlarged, which likewise existed before his venereal attack. Traces of chancres are found on each side of the frenum; the cicatrices are depressed but not indurated. Blennorrhagia is present, and this is of three months standing. In front of the right internal malleolus is a brownish cicatrix produced, according to the patient, by his boots, some three months since. It should be remarked, that he had worn these boots for a long time, and they had never caused the slightest pain. This ulceration has the same characters as that seated still higher on the leg. It healed spontaneously in the course of fifteen days. On the anterior and external surface on the middle third of the right leg are five ulcerations covered with a black, thick crust, which are also of three months' standing. These ulcerations are of a circular form; one of them is elongated in a vertical direction; they are deep, with prominent, perpendicular edges; a sanious pus covers their base; a deep-red areola four lines in diameter, surrounds them. But slight induration is felt at their base. Two of these ulcerations resulted from the fall of a piece of wood, which produced a solution of continuity. The others appeared spontaneously, in the form of little white pimples. Four or five small pustules exactly resembling those of acne are scattered over the leg. The diameter of these ulcers above mentioned is about two lines.

Nov. 1st, 1850. Inoculation was performed on the anterior surface of the right thigh, with pus taken from one of the ulcers which we have described, and which succeeded to the contused wound. The puncture was made with a lancet carefully cleaned for the purpose. The point inoculated was covered with a watch-glass. Iodated water, ℥ iss.; calomel and jalap, grs. xv.; dressings to the ulcers of straps of Vigo plaster.

2d. The point inoculated is covered with a sero-purulent fluid to the extent of about two lines. On gently removing this fluid with a piece of linen, without chafing, the epidermis is found elevated. The surrounding parts present to the touch a sense of engorgement, for the space of about one-third of an inch; there are no pains.

3d. A small pustule, of the size of a pin's head, appeared about one and a half lines above the punctured point; it is traversed by a hair. Another small pustule, somewhat larger than the other, exists at the distance of two-fifths of a line external to the inoculated point. On the latter itself, the skin becoming slightly tense, is a fissure resembling an elongated ulceration; within this fissure, for

the space of four-fifths of a line, is a yellowish surface, which appears to be produced by dried pus. The surrounding parts are red, not tumefied, and covered with a little dried purulent matter like a layer of varnish; no pains.

4th. The redness extended over a space of about two-thirds of an inch in diameter. At the centre is an ulceration of four-fifths of a line in diameter, covered with a crust. No pain. For the last twenty-four hours the point inoculated has not been covered with the watch-glass, which is no longer applied.

5th. The ulceration appears to be almost entirely healed; the redness diminishes, and the engorgement has almost completely disappeared.

6th. There exists a light grayish crust on the point inoculated. Redness and engorgement the same.

7th. The ulceration yields a little serous fluid; it has not increased in extent.

8th. Yellow crust, depressed in the centre, of cup-like form, and about two lines in diameter: slight engorgement beneath the crust; redness remains the same.

9th. Deep ulceration at the centre, superficial at the edges, about a quarter of an inch in diameter; slight engorgement and redness.

11. Crust nearly one-third of an inch in diameter, bulging at the centre, of a brown color, and surrounded by a red areola. For the space of four lines around the crust, there is no sensible engorgement. The ulcerations of the leg have a tendency to cicatrize; the bottom is elevated, the edges sunken, and the granulations covering them of a good aspect.

12th. Crusts of good aspect, prominent; no engorgement of the subjacent tissues. Redness the same; itching sensations, but no pains.

13th. The crust, when removed, appeared thin at its edges. At its centre was found a thickened portion which projected into the centre of the subjacent ulceration. The latter, superficial at its circumference, was about four-fifths of a line in depth at its centre; the surface of the ulceration is of a rosy hue, and secretes but little pus; no glandular engorgement.

14th. The crust has formed again, and presents the same characters as before, no more redness nor engorgement. The patient left during the day in consequence of his disobedience.

22d. He presented himself to me; the ulceration remains, and is covered by a thick grayish crust, bulging at its centre to the extent of a quarter of an inch, and is two lines in breadth; desquamation of the epidermis throughout to the extent of two-thirds of an inch; slight engorgement; no pains; pressure on the crust causes the discharge of a drop of pus.

The report of M. Dumenil here concludes. This student ordered the application of a cataplasm to the pustule. According to the patient, the crust separated the next day, and left behind a superficial ulceration, which cicatrized in five days afterwards.

Dec. 4, 1850, the patient presented himself to me. I observed sunken cicatrices at the lower part of the right leg, at the point

where the ulcerations had existed; they were surrounded by an areola of a brownish, coppery-red color. On the thigh, the cicatrices of the inoculated pustules presented the same characters; it was somewhat larger than a *ten-sous* piece. The skin around it was of a very brown color.

This case shows us an inoculated pustule, which seems to have aborted on the sixteenth day, and which afterwards reappeared and became of larger size. If the patient had been abandoned at the first period of the inoculation, we should have inferred that the latter had not succeeded.

Case 3.—I have already stated that M. Cazenave has experimented on a patient having a tubercular syphilitic eruption; a pustule of ecthyma broke out on his thigh, and the matter from this pustule was successfully inoculated on both fore-arms of the patient. The case is reported by M. Cazenave, with all its minute details, in the *Annales des maladies de la peau et de la syphilis.* He states, very positively, that the patient was exactly in the condition to favor the success of the inoculation. There was no primary accident; the patient was repeatedly and thoroughly examined with the speculum, before the experiment, and again at the moment when the inoculation was performed. The results of the latter were closely watched by several persons. It may be objected, says M. Cazenave, that a chancre, in this case, was mistaken for an ecthyma. If so, says the physician of St. Louis, *it is one of those arguments to which it is impossible to reply.*

In 1851, my colleague, M. Richet, then one of the surgeons of the *Lourcine*, informed me that he had succeeded in inoculating a consecutive syphilitic ecthyma. He also made several other writers on syphilis acquainted with the same fact. I accepted the invitation of my worthy colleague to witness the case, the details of which have been recorded by a distinguished *interne*, M. Dubreuil.

Case 4.—B. Nathalie, æt. 21, dressmaker, admitted July 5, 1851, into Ward St. Alexis, Bed No. 9, Hospital *Lourcine*, service of M. Richet. This girl, of a lymphatic temperament, a very strong constitution, menstruated for the first time at the age of seventeen; it was long before menstruation became regularly established, but she now suffers no pain at these periods; the discharge is abundant, and lasts for six days. Has never been pregnant, nor been affected with leucorrhœa. Previous to her admission to the hospital she had never been attacked with syphilis. Three weeks before her admission, she discovered several little pimples on the vulva, and, as they were attended with considerable itching, she scratched them until they bled. This produced small wounds, to which emollient lotions only were applied. They soon healed, but large flat tubercles soon appeared at these points, which attention to cleanliness was not sufficient to remove.

Examination.—Mucous tubercles are scattered here and there in large numbers both on the labia majora and minora; among them were two of smaller size situated at the fourchette, they were ulcerated on their surface, and appeared to be two chancres in pro-

cess of transformation. Nothing in the region of the anus, and neck of the uterus, is sound Slight vaginitis. Skin healthy; no frontal cephalalgia; no osteocopes.

Treatment.—One pill of proto-iodide of mercury, and two injections of alum daily; two alum tampons, and two baths (general) twice a week.

July 8th. The mucous tubercles are cauterized with a concentrated solution of the nitrate of silver. M. Richet observed before the cauterization that no trace of chancre remained.

9th. Patient complains of having suffered during the whole night at the internal and superior parts of the left leg. At the point designated, a small white pimple was discovered, formed by the elevation of the epidermis, and resting on a red inflamed base.

12th. This pimple has become transformed into a fine pustule of ecthyma; this pustule rises about four-fifths of a line above the surface of the skin; it is about five lines in diameter; its acuminated summit is formed by an elevation of the epidermis through which we detect by its transparency a fluid enclosed in the pustule. The point where the epidermis is raised, that is, for a radius of two lines in extent, has a yellowish aspect, the base of the pustule presents a bluish and violet hue, pressure at this point is very painful, and gives rise to a sensation of induration and tension. The adjacent skin is of an erysipelatous redness, disposed in the form of an areola around the pustule; this areola gradually fades as we leave the pustule, its diameter in every direction being about one and two-third inches. The patient is confident that at this point there has been neither excoriation nor puncture. Besides, the *epidermis covering the pustule appears to be prefectly intact throughout.*

M. Richet again examined the patient, and discovered that no trace of the chancre remained on the vulva, and called our attention to the fact that the effect of a single cauterization had been to diminish the size of the mucous tubercles one half, and that they were all shrivelled and sunken. Then having punctured the top of the pustule on the leg, there issued a fluid somewhat analogous to a reddish, slightly opaque serum; a little drop of this fluid was gathered on the point of a lancet, and inoculated at a corresponding point of the opposite extremity. To protect the point inoculated from the vaginal discharges, it was covered with a watch-glass fastened by means of a broad strap of diachylon plaster applied one and a half times around the limb, over which a bandage was applied; the patient was confined to her bed.

14th. The ecthymatous pustule has burst during the night, and discharged an abundant sanious fluid, which stained the linen red. This produced a hollow cup-like ulceration, with ragged edges, and a grayish base. A violet-colored areola of an inch in diameter surrounded it, leaving here and there exposed little whitish points formed by small collections of pus under the elevated epidermis. An extensive erysipelatous redness surrounded the whole. Before the pustule opened, the patient expe-

rienced throbbing, shooting pains, from which she suffered so much as to prevent sleep. Now the pain has ceased. On the other hand, at the point of inoculation, the epidermis is raised, forming a small vesicle of the side of a pin's head; this vesicle is filled with a liquid which appears white, limpid, and transparent; it is surrounded by a small inflammatory areola. Mercurial treatment still continued.

16th. The ulceration which has succeeded to the pustule of ecthyma is about four lines in extent in all directions; its edges are irregular, but have no tendency to become everted; they are smooth, circular, and the commencement of cicatrization is already apparent. The base, covered at first with a whitish false membrane, begins to become clean. At the seat of the inoculation, the vesicle produced by the elevation of the epidermis, has acquired the size of a lentil seed; it presents a whitish and slightly-yellowish aspect, and is no longer transparent The surrounding inflammatory areola increases in size; and the patient says that during the night she suffered shooting pains in this situation.

17th. The pustule produced by the inoculation rests upon an indurated base; M. Richet punctured it with a lancet, gathering on the point of the instrument a little of the purulent fluid which escaped, and inoculated it on the right arm.

18th. The ulceration which succeeded the first pustule is in process of reparation, the base is of a fine red color, and is nearly on a level with its edges. This pustule has remained sunken since the day when it was first opened. The inflammatory areola surrounding it is diminishing in size, but the base on which it rests is indurated, and pressure with the fingers gives exit to a drop of pus, mixed with reddish streaks, and the patient suffers pain. The second inoculation appears to have succeeded on the arm; the little vesicle formed by the elevation of the epidermis is filled with a white and slightly-opaline fluid. A rose-colored circle surrounds it. Patient states that during the night she felt at this point an itching, stinging sensation.

22d. The ulceration which followed the opening of the pustule, and which seemed for a time to have healed, again cracked and assumed a palish hue, the circumference always remaining violet colored; it rests upon a broad indurated base.

The pustule produced by the first inoculation has entirely healed, but an indurated portion of skin about two lines in diameter, and perfectly limited at its circumference, constantly remains. The pustule on the arm broke during the night; in its place a yellow, and even a somewhat transparent crust is found, which is formed by the desiccation of the fluid contained in its cavity. The inflammatory areola has completely disappeared. The mercurial treatment is suspended in consequence of incipient stomatitis.

30th. The ulceration which succeeded to the first pustule presents a pale violet aspect, and seems no longer inclined to cicatrize. It rests upon an indurated disk, which surrounds it at every point. The focus of induration, sole vestige of the first pustule produced

by inoculation, constantly remains. There is no longer any mark upon the arm.

Aug. 2d. The ulceration which succeeded to the opening of the pustule of ecthyma begins to cicatrize. The indurated focus still exists on the other leg, but its extent is greatly diminished.

21st. The ulceration which followed the opening of the first ulcer has not yet completely cicatrized, but appears as if soon about to be completed. The indurated portion remaining at this point, is reduced to a small nodule about the size of a pin's head. During the interval from Aug. 21st and Dec. 13th, some patches of psoriasis appeared on the palmer surface of the hands; M. Gosselin who now acted in the place of M. Richet, made the patient follow a mercurial treatment during the six weeks, and discharged her perfectly cured on the 13th Dec., 1851.

M. Dubreuil terminates his remarkable report as follows: "This case shows us that secondary syphilitic ecthyma, notwithstanding all that has been lately asserted to the contrary, may sometimes be successfully inoculated."*

As might have been supposed, this case has met with the hackneyed objection, which has been urged against every reported example of the inoculation with other products than those of chancre. M. Richet having successfully inoculated, could not have used matter from a secondary accident, because it is a *law* that secondary accidents cannot be inoculated. The pustule, therefore, from which the matter was taken must have been a primitive pustule, a chancre. Whence came this chancre? demands M. Richet. The female inoculated was sojourning at the *Lourcine*, and had no primary accident when the ecthyma appeared on the leg. Then a person in the same ward is accused, from whom the chancre pus was taken. But, replied M. Richet, there were no chancres in the ward.

Those who have examined the facts in a purely scientific point of view, have long since become satisfied. Thus my experiments have been confirmed in Germany by physicians who were unacquainted with what I had attempted. M. Cazenave has experimented and succeeded as well as myself. At the *Lourcine*, two colleagues, not at all interested in what I was doing, experimented independently; one of them, M. Bouley, succeeded in producing a mucous tubercle in a woman too who had already had syphilis,† and the other, M. Richet, successfully inoculated a secondary ecthyma. Those acquainted with the state of medical matters in Paris, can comprehend the importance of these facts, coming as they do from such sources as MM. Richet and Bouley. Both were at the head of the service at the *Lourcine*, a hospital opposed to the doctrine of the inoculation of secondary accidents: both have a reputation for probity, and for intelligence, which cannot be ques-

* This report, with the exceptions of the conclusion, was read at the *Lourcine* by M. Dubreuil in the presence of the patient of M. Richet, under whose observation it was made, in the presence of several students of the *Lourcine* and my *interne*, M. Pellagot, who accompanied me.

† Vid. the chapter on Mucous Tubercles.

tioned. Nothing now is wanting but an admission from Hunter, from him who promulgated the error which I now combat. Well, we shall see that Hunter himself has recorded in his work a conclusive example of the inoculation of the secondary accident! At page 524 of his *Traité des maladies vénériennes*, translated by M. Richet, first edition (*Amer. Ed. of Hunter by Babington*, p. 241.—G. C. B.), are these words which I carefully copy:

"To ascertain whether her secondary ulcers were infectious, that is, whether the matter of them would have the specific effects of venereal matter, she was inoculated by some matter from one of her own ulcers, and with some matter from a bubo of another person where mercury had not been used. This was done September 18, 1782. Sept. 19, the puncture where she was inoculated with her own matter gave her pain three hours from the time of inoculation, and the day following inflamed a little. The other had not then inflamed at all. Sept. 20, *both the punctures had suppurated, and had the appearance of a small pox pustule;* they spread considerably."

Here we have two pustules exactly resembling those of variola, produced, one from pus taken from a secondary, the other from that of a primary accident. The secondary was therefore inoculated as well as the primary accident. This fact is incontestable. But, then comes the system which, considering itself greatly compromised, thinks to save itself by pretending that the two pustules were not cured by the same means, that they did not terminate at the same period; Hunter therefore concludes, that secondary accidents cannot be inoculated. As if the pustules produced by inoculation with the pus of chancre were always cured by the same means, and always at the same time! I have quoted Hunter, and have referred to the page. I beg the reader to peruse the report from which I have given an extract; it is very remarkable on other accounts. Further, I shall be able to show that Hunter frequently contradicts himself. This will be done in the approaching chapter. We insert in this place one more case reported by M. Rossen, one of my former *internes:*

B. (Alphonse) æt. 17, carpenter, of a lymphatic temperament, constitution not very strong, admitted at the *Hôpital du Midi*, Ward 11, No. 11, March, 1851, and left on the 18th April of the same year.

Six months before, he had blennorrhagia; cured in a month spontaneously. On the 8th or 9th of March, 1851, the patient discovered a syphilitic eruption, for which he entered the hospital on the 17th March. When examined, we found the following characters.

Abdomen and Thorax.—There are here slight red elevations, conical-like papules, surrounded at their base by a red areola. The summits of some of these are covered by a small purulent vesicle containing whitish pus. On several, a small crust easily detached covered a small, brownish-red elevation. The eruption is sparse and scattered, and the pustules are irregularly spread over the surface.

Pubes.—On the pubes, in the midst of the hair, are thin, lamel-

lated, yellowish crusts; some are of a greenish color, others are soft, others friable. Among these crusts are scattered some acuminated, very small, and prominent pustules; the base of those which, from their isolation, permitted the fact to be noticed, was not surrounded by an inflammatory circle. They contain an opaque and purulent fluid.

Left Axilla.—The eruption here presents nearly the same characters as on the pubes; the pustules are very numerous, and at different points among them, are seen isolated crusts. The surface of the skin covered by the eruption is surrounded by a red circle. Over the scapular regions the eruption was of the same nature; only it is a little more discreet. Crusts, pustules, &c.

Right Cheek.—For a space of about the width of a five-franc piece are yellowish crusts, resulting from the desiccation of the pustules, which are very confluent at this point. They are wrinkled, and of a yellowish-green color. On detaching a portion, the skin is found red and shining. A sero-purulent discharge issues from the surface covered by this crust, and permits us to raise the latter at all points of its circumference. It seems to adhere slightly to the skin.

On the posterior part of the trunk and nates, exist irregularly scattered pustules. They have the same character as those on the thorax, with the exception of some which I shall describe more particularly. One of these is on the internal and superior part of the left nates. The diameter of its base, which is not indurated, is somewhat less than that of a half-dime piece; summit a little elevated, and covered with a crust not quite so broad as the base, and appears as if formed of super-imposed scales; the crust is somewhat raised by a thin layer of yellowish-green pus, is thick, and has a coppery-red areola (*ecthyma*). The matter from this pustule was used to inoculate the anterior surface of the right fore-arm. Two punctures were made.

On the external part of the right thigh is another broad circular elevation, with a prominent reddish base. Around and beneath this elevation is a feeling of induration, which seems to extend through the subjacent cellular tissue. The summit, more acute than that of the pustule last described, is covered with a yellowish crust of less thickness, and raised by a yellowish pus. Pus from this pustule was inoculated on the left fore-arm. These inoculations were performed in the presence of MM. Chaussit, Auzias, Turenne, and the students in the service; they were made on the 9th of April, 1851. The punctures were left exposed to the air during part of the day.

April 10th. On the right fore-arm, the punctures are surrounded by an areola, the diameter of which is equal to that of a half-dime piece. On the left fore-arm exists a red point: areola not more than half so large as in the other puncture.

11th. On the right fore-arm are two acuminated pustules, of the size of a lentil seed; areola very red, and of the diameter of a half-dime piece. On the left fore-arm the pustule is smaller, and conical shaped; areola of a rosy hue, and two or three millimetres in width.

12th, 13th. No change.

14th. Patient has chafed right fore-arm; surface reddish, and bloody. On the left fore-arm, the pustule is surrounded by a brownish-red areola, smaller than on the 11th.

15th. A new pustule has appeared on the right fore-arm, of large size, and seems formed by the union of the two first. Areola of a brownish red, diameter of a twenty-centime piece; crust yellow, slightly adherent, and raised by a thin layer of pus; base not indurated. On the left arm, the inflammation is of a browner color, and seems to spread.

16th. The pustule on right fore-arm presents the same characters as the first. That on the left seems as if about to disappear. Areola brown, and from two-fifths to four-fifths of a line in diameter; the epidermis raised by the pus appears to be in folds. The crust covering the right pustule was removed in the presence of MM. Auzias and Chausit, and beneath was found an ulceration with a reddish base. In its centre is a grayish portion formed by concrete pus.

17th. The crust on the right arm has been reproduced, with the same characters as the old. On the left, the inflammation seems to have assumed more activity. Areola larger and redder.

18th. On the right arm, the diameter of the areola remains the same, though somewhat browner; in its centre is a thin, yellow crust, formed by solidified pus. The pustule on the left arm is broken; there remains a thin, yellow, and very broad crust. The areola has the same characters as the old.

The patient left, on the 18th of April, to enter the hospital *St. Louis*. He was followed by M. Chausit, who has sent me the following note:

"The patient, on whom M. Vidal successfully inoculated two pustules of secondary ecthyma, entered the hospital *St. Louis* the day after leaving the *Midi*. Five days afterwards the crusts on the fore-arms separated and the ulcerations cicatrized. I saw him on the 28th of April; I found a well-marked, depressed cicatrix, of the diameter of a lentil seed, at the point where the puncture was made on the left fore-arm; this cicatrix was surrounded by an areola of a coppery-red, brownish color, the diameter of which was about one-third of an inch. On the right fore-arm, the cicatrix, instead of being depressed, projected a little on the contrary, like a tubercle. Same copper-colored areola. Brownish red spots marked the places occupied by the first pustules, but none of them presented a notable cicatrix. Patient left the hospital *St. Louis* on the 1st of May."

SYPHILITIC TUBERCLE.

The syphilitic tubercle appears in the form of a small, full, tense tumor, containing neither serum nor pus. This small tumor or tubercle is more or less elevated above the level of the skin. Sometimes they are scattered in large numbers over an extensive surface, sometimes, on the contrary, the number is limited and

confined to a small portion of the surface; occasionally we find them in more or less regular groups, whilst in other instances they are scattered unequally over various portions of the body. Sometimes they are small as a pea, circular, shining, and of a decided coppery color, or, on the other hand, they are broad, flat, or spherical, round, or of an oval form. But, in the latter case, there are several mucous tubercles, such as I have described at the close of the *first chapter*. Sometimes the tubercles appear as if encased in the thickness of the tissues, or, again, as if protruding to a trifling extent. Under certain circumstances they remain smooth and shining; in others, they are covered with light scales. Sometimes they become ulcerated and covered with thick crusts. In some patients the only trace they leave behind is a grayish spot, which at length disappears; in others, they are replaced by an indelible cicatrix, which is more or less irregular, according to the existence or non-existence of previous ulceration. Sometimes the syphilitic tubercle, no matter what its gravity, passes through all its stages, and commits all its ravages from without inwards over every point where it is at first established; sometimes, starting from a distant point it invades very extensive surfaces, destroying the skin more or less profoundly during its course.

These tubercles are found at every point of the surface, and even on certain mucous membranes. But by a very unfortunate preference, they attack especially the face; we find them then on the forehead, cheeks, and around the nose. Sometimes they appear in very small numbers; at other times they break out suddenly and simultaneously wherever they are going to appear. In some patients their eruption is preceded by the syphilitic fever, of which I have spoken. Locally, there may be a certain reaction, a slight pain, a congestion of the surrounding skin, or, on the other hand, no change of this portion of the integument. According to M. Cazenave we may always detect some accidental exciting cause.

Tubercles in Groups.—When tubercles exist in groups they are generally of small size; they have but little tendency to ulceration; and their coppery hue is always well marked. Sometimes these groups are regular, more or less numerous, and perfectly circular; the tubercles are of the size of a pea, prominent, very round, one by the side of another, forming a circle; every patch, including both the tubercles and the interspaces by which they are separated, is of a coppery-red color. Each tubercle, besides, is often covered by small, hard, grayish scales, which do not completely cover their summit. Generally they do not terminate in ulceration; their progress is slow; they do not ordinarily produce either a stinging or an itching sensation. At length they subside, and resolution, though tardy, is generally complete; no cicatrix remains. These groups of tubercles are found chiefly on the superior extremities, sometimes on the forehead and neck. Occasionally, on the other hand, the tubercles are grouped without any kind of order or regularity, as is represented in plate 6, fig. 4. Then they are generally small; but their form is more globular and circular, they are much more easily detached from the surface of the skin, as their

base is much less broad. They are, besides, of a shining color, and their coppery redness much more distinct. Sometimes, especially on the face, this redness extends much beyond the surfaces which are the seat of the tubercles; in this case they are also accompanied with a slight tumefaction. This is certainly the form of syphilitic in which the real coppery color is the most decided. On pressing these tubercles with the fingers, we feel a resistance like that presented by large pin heads. They seldom become ulcerated; it sometimes happens, however, that after having remained a long time stationary they inflame, the groups coalesce, and on the excessively tumefied surfaces deep ulcerations are established. What is much more common, is to see these tubercles, after having been for a long time stationary, diminish in size and lose their color; the redness becomes less and less marked, and resolution, after various lengths of time, is so complete that no trace of the tumor remains. This is the form most commonly observed on the face, especially on the cheeks and lips.

Disseminated Syphilitic Tubercular Eruption.—This form appears particularly on the face; occasionally it is observed with the grouped variety, but it is then in the regular groups, those which form circles. Sometimes there are wide intervals between the tubercles; the skin in the interstices is then faded, and of a dull color. They are at first small, but afterwards become larger than the others. Their form is most generally irregular, but their base is broad. They have a decided copper color; the skin covering them seems tense and shining. They rarely ulcerate, and secrete no matter. They are slow, both in their development and progress. At first, as already stated, they are small; they increase in size, and attain the volume of an olive. Then they become stationary, and may remain so for a long time. A change afterwards occurs, they gradually diminish in size, become flattened, and disappear after two or three weeks, leaving only a spot which may remain for a month. Or, it may leave a smooth, superficial cicatrix, which has not been preceded by suppuration, ulceration, or any solution of continuity. In rare cases, the tubercles ulcerate, and then the cicatrix is more profound and irregular.

Perforating Syphilitic Tubercular Eruption.—The name of this variety indicates its gravity. The tubercles are of large size, few in number, semi-spherical, and elevated at the summit, and have a broad base, which seems to penetrate the dermis, and to be confounded with it. Individuals with a delicate soft skin present the greatest number of examples of this variety. They occur almost always on the face, attacking the nose, lip, and sometimes the pavillion of the ear. Ulceration in these cases is the rule. The tubercles, indeed, after a certain period of indolence, inflame and ulcerate at their summit, in two different manners: 1st. They become softened, slightly painful, and a superficial loss of substance occurs; they resemble small purulent collections which have united and opened, on which moist and slightly-adherent crusts form, and when they fall, leave a cicatrix which does not exceed the area of the tubercle; 2d. The tubercle becomes tense, redder,

painful, and is surrounded by an erythematous patch. Ulceration invades its summit, and penetrates speedily throughout its entire thickness; a thick and more humid crust forms, which soon falls, leaving a deep, perpendicular ulcer; another crust forms and falls again; a new destruction takes place, which is repaired at the expense of a deep violet-colored cicatrix, often appearing as if cut out with a punch, and representing a quarter, or half a circle. This destruction involves a portion of the cartilage of the ear, or of the lips, and especially of the nose. When new tubercles are developed after the first, the ulcerations may become confounded, producing a hideous mutilation of the face. It is not uncommon, then, to see both alæ of the nose destroped, and what remains of this organ is represented by a large red stump. In rarer cases, the tubercles unite, a considerable tumefaction takes place, and by an effort of the organism, or under the influence of rational treatment, the whole gradually disappear without ulceration or suppuration. But, unfortunately, this cure is often only temporary; from various causes the tubercles reappear, ulcerate, and the havoc above mentioned follows; or, on the other hand, reparation becomes complete without any previous ulceration.

Serpiginous Syphilitic Tubercular Eruption.—The ulceration is here more superficial than in the preceding variety. Instead of destroying from without inwards, as in the last variety, that is, deeply, the serpiginous form skims over the surface, as it were, of the skin, but always invades new regions. The furrows have been seen to cut up almost the whole surface of the body.

This variety of tubercular eruption is observed on all parts of the body, but more particularly on the trunk, face, and wherever hair abounds. The tubercles, scattered irregularly here and there, are few in number at first, and of a volume varying from that of a large pea to a walnut. They are smooth, shining, of a decided coppery tint, remain stationary for some time, after which ulceration supervenes; a black crust is formed which falls. If reparation is not complete beneath it, we find a superficial, grayish ulceration, which becomes again covered with a crust, but less black in color, and of a less compact consistence.

The ulceration increases by the destruction of tubercles already existing, or by those which are developed in the situation of the first, or their vicinity. The tubercle always precedes the ulceration, and seems to direct. It is when a new tubercle appears, and, as it were, prepares the ground of the ulceration, that we perceive that reparation at an opposite point has commenced. At the same time we may observe, over a limited extent, 1st, the tubercles which prepare the ulceration; 2d, the grayish ulceration, with perpendicular edges; 3d, the points covered with crusts; 4th, other points, the seat of the recently-formed cicatrix.

These ulcerations generally leave very irregular, violet-colored cicatrices, perforated by numerous small vessels, and there are bridles, resembling those resulting from burns of the third degree. Sometimes nearly the whole surface of the patient's body is covered with these cicatrices, which occasionally degenerate, and as-

sume the characters of keloides. I have had under my care, in Ward 10, No. 26, a patient whose case was remarkable for the number and the aspect of these cicatrices. He was twenty-three years of age. He had ulcerations near the frenum, accompanied with a very abundant discharge between the glans and the prepuce; at the same time there was phimosis. These ulcerations lasted for about a year, alternately appearing and disappearing; they were dressed with aromatic wine and Goulard's extract, a treatment which had been recommended at the *Hôpital du Midi*. There was no bubo, nor was there any eruption on the skin.

One year after these ulcerations were cured, he had an attack of pharyngeal angina, and was treated by a homeopathist, who administered globules to him for eight months. Two months afterwards, that is two years ago, he had an eruption on the skin. According to the statement of the patient, this eruption commenced by a red pimple (tubercle) which appeared on the right leg. Similar pimples broke out on the right thigh, the hip, and the left nates, and on the posterior surface of the arm; on the face, they occupied the chin, nose, forehead, and left mastoidean region. These pimples exhaled a fluid which formed into crusts. The patients remarked that these crusts were surrounded by a red circle, which, as it were, marched before them. The affection, in fact, did not remain stationary; it extended from point to point, disappearing where first developed, to reappear on the adjacent parts; so that, the cure preceding, or rather accompanying the ulceration, the latter never occupied at the same time a space of a larger diameter than a half-eagle piece. At the points where the crust had disappeared, a cicatrix formed, resembling that of a burn of the second degree. This form of cicatrization was not at every point the same; in some regions—on the chin, nape of the neck, and forehead—the patient observed fleshy growths, which attained a large size. One of them, situated on the forehead, and of the size of a walnut, was removed by a physician of Nantes, who prescribed a sudorific syrup and two hundred pills of the proto-iodide of mercury. Under this treatment the ulcerations were speedily cured; even the fleshy tumors, developed on the scars on the face, seemed to diminish in volume. At present, May 15th, 1851, about three years since the appearance of the first eruption, the patient has neither tubercles, crusts, nor ulcerations. Instead of these, we find cicatrices of the character described; on the legs, thighs, and arms, are broad cicatrices of a reddish color, irregular edges, covered by a thin transparent pellicle, and appearing to be consecutive to the ulcerations of the deeper layers of the dermis. On the face, the cicatrices, at points, are of a dull whitish color, at others they are of a bright or violet red color, but at certain points we observe something very remarkable, as, for example, on the cicatrices covering the chin and surrounding the mouth, perpendicular to the long diameter of the latter, we observe a kind of fleshy crest, about one and a half inches in length, not very thick, and about a line in height. This crest is of a reddish color, and covered with a thin pellicle, and strongly resembles the bridles re-

sulting from burns. In the left mastoid region is a growth similar to that on the chin, but of much larger size; it appears to be produced by a swelling of the subcutaneous cellular tissue, but is exposed by the ulceration of the dermis; it is of a red color, of an irregular form, and projects to the extent of some two lines, and is two inches in diameter, covered with a well-organized pellicle, the aspect of which resembles that of mucous membranes exposed to the air. Around this fleshy growth is seen a whitish cicatrix, on which this fungous growth is developed. The patient complained of no pain in these vicious cicatrices, in which he felt occasionally only an itching sensation. There were no other syphilitic accidents.*

III.—CAUSES.

In treating in general of the consecutive affections, I was compelled to speak of the causes of the syphilitic eruptions, since they are the accidents of most frequent occurrence. But, connected with these cutaneous eruptions, questions have been raised which I cannot pass in silence. It has been asked if blennorrhagia may be followed by a syphilitic eruption. Upon this point, in my opinion, there can be no question, since I have proved that there is a syphilitic blennorrhagia. These blennorrhagia, therefore, may produce the same effects as chancre. I do not believe that one of the forms of primary syphilis produces a more intense and speedy action on the system, and has a stronger tendency to cause eruptions on the skin than another. Blennorrhagia, like chancre, may produce the syphilitic diathesis; and the manifestations of this diathesis depend, not upon the cause, since in both it is identical, but upon other circumstances, and other influences. From what I have stated, my opinion may be inferred on the question, if there exist any real connection between certain primitive forms of syphilis and certain varieties of the eruptions: in other words, is Carmichael's doctrine true? To this, I reply in the negative. I do not believe with the Irish surgeon, that blennorrhagia, or what we designate as simple chancre, must necessarily produce the papular eruption; that the chancre with elevated edges (*ulcus elevatum*) is followed by the pustules; and that psoriasis depends upon the true Hunterian chancre: I do not believe in these imaginary dependencies, because I have seen the same chancre, the indurated chancre, followed by every variety of eruption; and I have observed these same eruptions occurring as primary affections (*d'emblée*), in other words, without any preceding syphilitic accident, without a blennorrhagia, or chancre of any kind.

[Mr. Liston regarded the scaly eruption as pathognomonic of the chancrous form of primary sore (the Hunterian chancre). Although Mr. Acton believes in the doctrine of a simple virus, in a note on page 285 (2d Am. ed.), he observes: "And here I must agree with Mr. Carmichael in his belief, that indurated sores will be followed generally by a peculiar form of secondary accidents. These

* Reported by my former *interne*, M. Pellagot.

eruptions are usually found to be scaly, and attended with sequela, which seems to have a strict relation to induration; I believe to that gentleman we must give the credit of having called public attention to this view of the subject, which subsequent experience has confirmed." The true scaly eruption at the present day, like the true Hunterian chancre, is rare, and, from what has come under our own observation, we are disposed to accept Mr. Carmichael's views—at least, so far as the scaly eruption is concerned. Doubtless, as suggested by Mr. Egan (*op. cit.* p. 49), the desquamating stage in which the majority of eruptions terminates, has led to confusion on this subject.—G. C. B.]

The question is of more importance as regards the influence of treatment on the development of these eruptions, and especially the mercurial treatment. As soon as it became established that mercury is not indispensable to the reparation of a chancre, it was also pretended that this same agent did not prevent the appearance of the consecutive accidents, the syphilitic eruptions; finally, not only was its utility contested, but dangers were attributed to its use, and it was accused of causing instead of preventing the eruption, whilst the more moderate maintained that the eruptions were less grave when mercury was not administered.

It is very true, as has been already shown in this work, that chancre may heal without mercury, and that after the cure of this primitive accident no further trouble may be manifested. But this fact does not destroy that other fact, also unquestionable, of the greater frequency and gravity of the syphilitic eruptions when the primitive accident has not been treated; that is, when there has been no specific treatment, and especially when mercury has not been employed. The utility of mercury, therefore, is evident; it cannot be questioned by any true practitioner. The value of this agent, as a preventive of the syphilitic eruptions, and its efficacy as a curative means, is a sufficient reply to those who accuse mercury of producing these affections. There is another argument of still greater force; it is based on the fact, that workmen, who are constantly exposed to mercurial emanations, and who suffer from salivation and mercurial tremors, are never affected with venereal eruptions. Biett attached great importance to this fact in his *Cliniques* at the hospital *St. Louis*, where a large number of gilders came under his care. If to these workmen we add those who have never been exposed to the influences of mercury, and who have had chancres followed by the syphilitic eruptions, we shall find that we have superabundant proof that the dangers of mercury have been exaggerated. To the primary cause, which is the syphilitic virus, and the other influences which we have mentioned, as concerned in the etiology of the syphilitic eruptions, we must add an occasional cause; according to M. Cazenave, who always admits this element, *whatever produces the simple, may prove the occasional cause of the syphilitic eruptions.* This occasional cause may be a vapor bath, salt or fresh water bathing, excessive drinking, a violation of the laws of hygiene, or a strong mental emotion; a wound, an intermittent fever, the

application of a blister, intense cold, excessive fatigue a violent medicine, &c., may all likewise prove exciting causes. These cannot always be detected, but when they do exist may generally be appreciated.

IV.—DIAGNOSIS.

The diagnosis of the syphilitic eruptions is of great importance. A mistake here may be the cause of much domestic unhappiness, and lead to a specific treatment, which is not always free from inconveniences; on the other hand, a disease which unaided by art is seldom cured, may be abandoned to itself, and the traces of its ravages may be left in mutilations which might by proper treatment have been prevented. To avoid such errors, we must have recourse to the characters common to all the syphilitic eruptions, and to those peculiar to the individual varieties. I have entered into this double study at such lengths that I may here be brief. In cases of embarrassment, we must rely chiefly on the common characters, such as the color and form. The antecedents should be carefully investigated. But it should not be forgotten, that the first infection may have occurred in a manner unknown to the patient. A kiss, which a patient believed to be innocent, may be the cause of a frightful syphilitic eruption. The long interval between the appearance of the latter and the former act, may have caused it to be forgotten. A false pride may also induce the patient to tell a falsehood, and there are certain conditions in private life into which the scrutiny of the physician cannot penetrate. Thus, for several reasons, we may fail in our efforts to obtain the antecedents of the case, which, however, affords us no excuse for discarding their value, or neglecting their search. To confirm or destroy the suspicions excited by a knowledge of the antecedents of the case, and to remove all doubts as to the character of the eruptions, a special treatment has been proposed, viz., the mercurial. It is very true, that in the syphilitic eruptions mercury acts with power; but its effects are not so certain and so prompt that we may avail ourselves of it in forming our diagnosis, for some cases of the nature of which there could be no question, have resisted every known mercurial preparation, and there are others which are modified by this agent only after a very protracted administration. Further still, there are eruptions not venereal, for the treatment of which mercury is of decided efficacy. It is besides improper to demand light from a source itself requiring it; and it is certain that obscurity prevails as to the *modus operandi* of remedies. We must seek for an exact useful diagnosis in another quarter. We must carefully study the characters which distinguish these eruptions on their first appearance, with a view to their practical appreciation. First, we must endeavor to establish the special nature of the disease; we must see whether it presents the common characters which render venereal affections so remarkable; we must consult the syphilitic physiognomy. I think that I have sufficiently established these common characters. There

is a peculiar color belonging to the eruption itself, and a peculiar hue also of the sound parts, harmonizing with those which are diseased; a disposition, a plan which seems to belong especially to them, and which, in connection with the other characters, constitute the basis of our diagnosis. If we thoroughly understand the characters common to all the syphilitic eruptions; if we have several times observed them, they become so familiar, that at the first glance, and even at a distance, they may be recognized.

[Mr. Erasmus Wilson, unquestionably a high authority in all matters pertaining to cutaneous pathology, thus speaks of the copper color, the pathognomonic character of the syphilitic eruptions. After alluding to the different shades of this copper-color, according as it is blended with yellow, brown or red, he states that the reddish yellow brown is the true type of the color of the eruption under consideration. "The copper color represents, in fact, a declining stage of the eruption, when the congestion is subsiding, and the yellow stain of the altered fluids of the skin shines through the purple of the blood. The 'copper color,' therefore, may have a greater or less amount of red or yellow in its composition, and be either a reddish copper color, or a yellowish copper color." He remarks that the dull purplish red, the muddy red, and the yellowish red, called "copper colored," are by no means characteristic of the syphilitic eruptions, being commonly met with in chronic eruptions of other kinds, as, for example, acne. He has seen non-syphilitic eruptions possessing more of the dull and muddy hue, supposed to be peculiar to syphilis, than syphilitic eruptions themselves; and "in selecting undoubted syphilitic eruptions in their earliest and best-developed stage for illustration in my 'Portraits of Diseases of the Skin,' I have sometimes felt a regret that there was not more of the coppery hue present. But to have obtained this 'copper color,' I must have waited until the eruption was in its decline. The color of the skin must not, therefore, be relied on as proof of their syphilitic nature, although it may be fairly taken as a pathognomonic character where other symptoms tending to the same diagnosis are found to be present."—G. C. B.]

An early diagnosis is of the highest importance, for by it we arrive at a more accurate knowledge of the nature and special form of the eruption. These points being ascertained, we endeavor to determine to what order the eruption belongs. "Then it is," says M. Cazenave, "that we may advantageously apply the method of Willan; then, also, should we scrupulously aim to avail ourselves of all the knowledge acquired by observation. Indeed, the diagnosis of the form is often attended with the greatest difficulties to be imagined; and if it be remembered that the progress of venereal eruptions is essentially chronic, and that the elementary lesions, often not well marked, leave behind other lesions which may lead to confusion, we may see that for certain forms in particular, these lesions are frequently of such a transient nature that they cannot be appreciated; as, for example, in almost all the vesicular, and in the lenticular pustular eruptions.

The diagnosis, then, is chiefly based on a knowledge of the general characters; it may, in many circumstances, be rendered more easy by other circumstances, which, however, are essentially connected with the eruptions themselves. Thus we may be greatly assisted by a knowledge of the accompanying symptoms which are frequently observed, and by that of the peculiar characters which establish sufficiently the existence of the syphilitic affection, and which is especially manifested by a tendency to destruction. However, we should not attach more value to these otherwise important signs, than they really merit; for, if, as already stated, a syphilitic eruption may coexist with a simple eruption, still more may a special affection coexist with an extosis, &c. The concominant symptoms are then but a means of attaining a diagnosis, but on themselves they are insufficient to lead to a positive decision. On the other hand, other affections may leave behind cicatrices, and we should not be too readily inclined to regard them as a proof of the action of syphilis, although the syphilitic cicatrix has an especial mark; but the observations made in reference to accompanying symptoms apply to the cicatrices. In doubtful cases, assistance may be derived by appealing to the antecedents of the case; but this can never be but an accessory means among others which shall conduct us to the discovery of the truth.*

V.—PROGNOSIS.

The prognosis in the syphilitic eruptions is not generally of itself grave; the dangers arise from the complications and relapses, for in cases of relapse the skin is always affected to a greater depth. These affections, taken together, form two great groups. One, which is the most common, appears shortly after the primitive accidents, and assumes a character comparatively more acute, and extends over a large portion of the surface; this group I call superficial, benign; it consists principally of roseola, papules, and numerous superficial pustules. The other group is of a more chronic character, supervening upon the first when the latter has been badly treated; in this group depth, instead of surface, is involved; compared with the former, it is malign. The deep-seated pustules, the pustulo-crustaceous eruptions, those of chronic ecthyma, few in number but profound, which appear on the extremities and legs, and the tubercles which invade the face; those which manifest themselves at a somewhat later period, before the osseous affections, or at a very late period, even after exostosis, are of a very grave character, because they exhaust the patient's strength, and leave indelible traces and sometimes mutilations which unfortunately occur most frequently on the face, rendering the condition truly hideous. Add to these facts the difficulties in the way of treatment, much greater here than in the first category, and it will be evident that the deep-seated and chronic forms are of a more serious character than the superficial and acute.

* Cazenave, *Traité des syphilides*, p. 554.

The prognosis depends also upon the treatment. Now, as it has been shown that it is by the relapses that the syphilitic eruptions become more and more profound, we should endeavor to prevent them. The best means is a methodical treatment, into which mercury should almost always enter. It is true that the most judicious and best-directed treatment does not always prevent a return; but, as it is also well established that these returns are much more frequent when the treatment has been improper and badly managed, the eruptions which occur at first should be thoroughly treated, or what is still better, the primary accidents should be actively treated, so that eruptions may be prevented, or if they appear, it shall be in a mild form, and one easy to be cured.

VI.—TREATMENT.

The treatment of the syphilitic eruptions is internal and external.

INTERNAL TREATMENT.

Having treated particularly of the internal treatment of the *so-called* consecutive *venereal affections*, and the syphilitic eruptions being among the most frequent of these, I shall here be brief. I must, however, repeat, to a certain extent, and add some details.

It is evident that mercury should constitute the basis of our therapeutics. The form most frequently employed is the *proto-iodide* of mercury. In my opinion, mercury should never be discarded except when there is a very decided repulsion on the part of the system, and even then it should not be wholly thrown aside. I have seen, indeed, patients at first decidedly anti-pathic to mercury, and in whom it produced unpleasant effects in the abdomen and mouth; some of these were debilitated by the smallest doses of mercury, and yet after having been strengthened by the preparations of iodine or iron, these same patients could take and tolerate the mercury, and it finally became the means of their cure. I have already mentioned these practical facts. I repeat, that I prefer to begin with small doses of mercury, for I fear that large doses will compel me to suspend the treatment, which would be an unfortunate circumstance, tending to favor the relapses and to make the subsequent treatment more difficult. However, I must acknowledge that I do sometimes discontinue the use of mercury even when it is well borne, but it is only when it has been used for a long time, as for two months, without arresting the progress of the disease. Then, if the patient retain his strength, I administer, every morning, a glass of Seidlitz water or of the citrate of magnesia, and after awhile resume the use of the mercury, which, in the majority of cases, then advantageously modifies the eruption, even in the same doses, which, before the repose, and the repeated purging, were ineffectual. When the constitution is much impaired, instead of purging the patient, I resort to the preparations of iron, or the iodide of iron, or I confine my treatment to substan-

tial nourishment, with the view of always resuming the employment of the mercury.

The preparations of iodine, especially the iodide of potassium, should be administered when the eruption is deep-seated, and when it is complicated with other affections still more profound, a subcutaneous lesion, such as a periostosis or an exostosis. There are still many practitioners who conjoin with these means the use of sudorifics. Here, as in the treatment of the primitive accidents, a question arises which is difficult to decide, viz. that of the duration of the treatment. "In general," says M. Cazenave, "in the milder, recent forms, if the disease disappeared rapidly, in the course of a month or six weeks, for example, the treatment should be continued for a month longer, dividing the time into three portions. One in which the complete treatment is maintained, and two others, in which the quantity administered is gradually reduced one-third. If the treatment has lasted for several months, the medicine should be discontinued for several days after the cure has been obtained, and then its employment should be resumed with the same decision as during the first several weeks." Thus, M. Cazenave recommences the treatment two or three times, according to the gravity of the preceding disease. In the severer forms, a still longer period is insisted upon; and when after a long interval, the medicine having besides been well tolerated during the whole duration of the treatment, an intolerance is manifested, it is with the physician of the *St. Louis* hospital the strongest evidence that the disease is completely cured.

EXTERNAL TREATMENT.

The cure of the syphilitic eruptions may be promoted, their removal hastened, and certain local accidents mitigated by external means, by topical applications. Simple general bathing, starched or gelatinous baths, may prove of service in cases complicated with inflammation, and when there is a manifest over-excitement. In these cases, emollient, sedative, and even opiated fomentations may be advantageously employed. M. Cazenave condemns the use of cataplasms, which have been recommended by several practitioners, especially if applied for the purpose of promoting the separation of the crusts of certain syphilitic eruptions. By exposing the ulcerations they render them painful; the ulers assume a bad aspect, enlarge and soon become covered with a new crust. It is much better for the crust to fall spontaneously, that is, that its separation should result from a rational treatment, which has produced a reparation of the ulcer. When the eruptions are not irritable, baths, and simple vapor *douches*, may prove of service. The papular, tubercular, and squamous forms are speedily modified by these means. The cure of the syphilitic exanthemata, of lichen, of impetigo, is expedited by baths of amidon and gelatine. M. Cazenave has a high opinion of alkaline baths in the majority of the syphilitic pustular affections, especially when the dry crusts

seem to indicate that reparation is complete. He asserts that sulphurous baths are not in these cases particularly indicated. There are two kinds of baths still more special than those which have been mentioned; these are the corrosive sublimate baths, and fumigations with cinnabar. According to M. Cazenave, the sublimate baths are not to be trusted even as auxiliary means, in the treatment of the syphilitic eruptions. Considered as topical applications, these baths would be a rational means; but they should not be confided in alone in our general treatment. The vapor baths of cinnabar are, on the contrary, generally approved. MM. Ricord and Cazenave agree on this point. The cinnabar fumigations may be either general or local. Ointments are but rarely employed. Those containing the proto-iodide of mercury are generally preferred. M. Cazenave adopts the following formula:

OINTMENT OF PROTO-IODIDE OF MERCURY.

℞. Hydrarg. Proto-iodide, grs. xv.
Axung. ʒ i.

This is used in the dressing of the ulcerations of lupus syphilitica.

In these same cases, if we desire to modify more actively the non-ulcerated tissues, we are to use the following, which is a true escharotic:

OINTMENT OF THE DEUT-IODIDE OF MERCURY.

℞. Hydrarg. Deuto-iodide, gr. i.
Axung. ʒ i.

M. Ricord states that he has found benefit in the squamous form from the use of the goudron ointment of M. Emery. This is the formula:

GOUDRON OINTMENT.

℞. Pin. Sylvest, ʒ iii.
Axung. ʒ x.

Cauterizations are generally avoided. After the crusts in syphilitic rupia have separated, M. Ricord dresses the ulceration with charpie steeped in the following solution:

SOLUTION OF IODINE.

℞. Aq. dist. ʒ vi.
Tinct. Iod. ʒ iss.
Iod. Potass. grs. xv.

The application of the sparadrap of Vigo *cum mercuria* cannot be too highly recommended in the majority of the *syphilitic* eruptions. I have already mentioned an excellent example of the rapid cure

of several very grave, extensive, and serpiginous ulcerations. It is, perhaps, the means which most speedily removes the symptoms. The value of this plaster is most apparent in the treatment of certain syphilitic eruptions on the face.

SECTION II.

DISEASES OF THE APPENDAGES OF THE SKIN.

I.—FALL OF THE EPIDERMIS.

In the preceding section, when treating of the squamous syphilitic eruptions, I alluded to an alteration of the epidermis which becomes of a horny nature on the soles of the feet and the palms of the hands. There are also certain other changes to which the epidermis is liable, and to which it is well here to refer. The epidermis, indeed, in all the consecutive accidents, becomes somewhat thickened and discolored, of a white, grayish hue, and afterwards separates by little disks, and leaves the papillary substance covered only by a very thin layer of new epidermis. These phenomena are observed especially on the palms of the hands. When these patches multiply and become united, the epidermis may separate to a very great extent: the fingers being in some cases likewise denuded. By some writers, this shedding of the epidermis on the hands, feet, and other points of the body, has been called *pelade.*

Occasionally the epidermis separates in extremely fine furfuraceous desquamations, as, for example, on the scalp, thus producing alopecia, though, in some instances, there is no loss of the hair.

II.—ALOPECIA.

Those who have studied the different classifications of the accidents of syphilis, are aware that one of the first was made by Fernel. According to this eminent physician, the syphilitic virus does not invade at once the whole organism; it penetrates by layers, proceeding from the epidermis towards the deep-seated parts, until it reaches the bones. Adopting this theory, Fernel established four degrees of syphilis. In the first, the virus becomes insinuated like a vapor beneath the epidermis, producing a loss of the nails and hair. Fernel's theory, like all other theories, may be discarded, but the facts remain; it is very true that alopecia is one of the first manifestations of the syphilitic infection. Here, however, we must carefully distinguish partial alopecia, from general, universal alopecia, involving the loss of the hair throughout the body. Without this distinction, it is impossible to explain the differences of opinion which exist in relation to alopecia, or to

commence a serious description of this accident. Thus it is evident that if M. Desruelles had recognized this distinction, he never could have asserted that this affection has almost entirely disappeared,* that it is no longer observed; and M. Lagneau would not have declared that it is exceedingly rare. If these authors intend their remarks to apply to general alopecia, then they are correct, but they would completely reject the facts, if they disputed the frequency of partial alopecia. This phenomenon, indeed, is common in the commencement of the diathesis, when there are cephalalgia, and rheumatoid pains. M. Baumés, who agrees with me on this point, states "that this partial loss of the hair is observed after quite recent attacks of chancre and blennorrhagia."† In such cases there is sometimes a furfuraceous eruption, a slight desquamation of the epidermis at the roots of the hair, and alopecia occurs; but this sometimes takes place without any apparent alteration of the epidermis. Friction, a slight traction, the action of a comb, detach the hair on the scalp; occasionally the hair on the body is removed in the same manner, but this is much more rare.

In partial alopecia, the hairy bulbs are not always affected, or at least, they are not so much impaired as to prevent the growth of the hair. Such is not the case, however, with the hair on other parts of the body, proving that in persons thus affected, the infection is more complete.

M. Reynaud, of Toulon, has remarked that in partial alopecia, the affection assumes a circular form, and that this tendency which has been noticed in describing the general characters of the syphilitic eruptions, is manifested even here. The scalp is thus laid bare in disks, forming, as it were, little *tonsures*. The same thing may happen with the beard. Generally, we do not observe during the first stages of syphilitic infection this circular disposition in the falling of the hair; but it is lost at various points; sometimes so slight is the loss, that it is not noticed. A little is brought away with the comb, and this is all that arrests the patient's attention, and individuals who are negligent of their persons may be wholly unaware of the loss they sustain. It is owing to this circumstance, that this phenomenon is rarely noted in the reports of cases, and that able writers have asserted that alopecia is very rare.

General, universal alopecia is indeed rare, for it occurs only during the last stages of the diathesis, and frequently when a syphilitic cachexia has already formed. It is this degree of alopecia which, in the language of Brassavole, "gives to the patient a ridiculous aspect, for we cannot refrain from laughing when we see men without beards, without eyebrows and eyelashes."‡ I have seen an instance of complete, universal alopecia. The man was examined by several syphilographers, for he passed from the care of one to another. So completely was his system saturated with syphilis, that the whole habitude of his body was changed;

* Page 612. † T. ii., p. 411. ‡ *De morbo gallico.*

his virility was completely annulled; and so degraded was he, that his sex could hardly be recognized. Brassavole would have thought him more than ridiculous. He had lost all the hair on his head and body; his eyebrows, beard, the hair on the pubes, and in the axilla, were all wanting. The complete report of the case has been published by M. de Castelneau in the *Annales de la syphilis*, tome i.

Mercury is accused of producing alopecia, as it has been of all other consecutive accidents. M. Desruelles was the most decided on this point, and we know that other pupils of Broussais have repeated the accusation. No one acquainted with the dictates, or fruits, of a false system, will be surprised at this. There has been in fact, and still is, hydrargyrophobia. But what is surprising, is, to see men who were never devoted to Broussais or his school, men of true merit, absolve syphilis and attribute the alopecia more or less directly to mercury. Of this number is M. Gibert. (*Vid. his Manuel*, p. 433.) It may, however, be easily proved by two circumstances that mercury has been unjustly accused, and that the syphilitic virus is the true cause. In the first place, observe the workmen who are daily subjected to the influence of mercurial emanations, and there observe what occurs in patients affected with syphilis, and who are never submitted to mercurial treatment. The former, the gilders, for example, have attacks of stomatitis, mercurial tremors, but never alopecia, except it be senile alopecia. Patients with the venereal disease, on the contrary, if the disease be left to itself, frequently have partial alopecia, at first, and if the disease continue to be neglected, and the diathesis reach a state of cachexy, the alopecia may become universal, and the patients be deprived of all their hair.

Alopecia, therefore, does actually occur; it frequently presents itself under a mild and partial form, and is one of the first manifestations of syphilitic infection. General alopecia is also sometimes, though rarely observed, and in the last stages of the diathesis. Both forms are independent of the effects of mercury. This agent, on the contrary, is one of the best means of preventing or of arresting this accident. When it has become general, it is incurable, that is, there can be no hope of restoring the hair. When, on the contrary, it is partial, and the diathesis has only commenced, a complete cure may be obtained. For this purpose a number of lotions and ointments have been invented, which, in my opinion, are useless. I repeat, that we must resort to the use of mercury.

III.—ONYXIS.

Under the influence of the syphilitic virus, the matrix of the nail sometimes suffers changes, which depend upon an inflammation more or less acute. There is, also, often ulceration, but in many cases a vicious secretion only of the matrix is observed; occasionally, but more rarely, the nail is lost without any appreciable alteration of the skin. The ulcerative inflammation of the

matrix of the nails is preceded by a somewhat painful tumefaction around the nail, but especially around its root. The skin becomes alternately of a coppery and of a violet-red color. This part of the integuments, which at first become softened, is excavated by an ulceration which has a grayish, blenny base, covered by a sanious liquid of a fœtid and peculiar odor. At other times, on the contrary, the swelling which is round and folded on itself, projects on each side of the nail, and is separated from it by pus which may be made to issue on each side by pressing on the tumefied skin. This pus is often mixed with dark-colored blood. M. Cazenave states that he has frequently observed sleeplessness in these cases. It is rare that the skin does not at length ulcerate; in which case, the wound thus made more extensive, exposes a larger portion of the root of the nail. Whatever may be the progress of this inflammation, the pus which constantly bathes the matrix and the nail, completely detaches the latter, which in its fall, lays bare the matrix, which may not be ulcerated, when the nail will be quickly reproduced, however the disease may progress towards a cure. On the other hand, the matrix becomes ulcerated, and fungous, surrounded by a prominent swelling, itself ulcerated throughout nearly its whole extent, and then the nail is not reproduced; the syphilitic ulceration is replaced by a furrowed cicatrix and small horny patches of no particular shape. This variety of onyxis, which was well described by Delpech, is rare; it attacks the fingers and the toes, but more frequently the fingers; it forms one of the complications of the more or less severe symptoms of syphilis, and especially the syphilitic eruptions.

The inflammation of the matrix of the nail does not generally advance in ulceration. The skin then remains intact. Sometimes there are very severe pains under the nail itself, but there is neither a tumefaction of the skin, nor purulent discharge. The secretion of the horny matter is vicious, and the nail may present a number of different alterations.

"Sometimes it becomes at several points of a gray color, dry and broken at its free extremity; sometimes, independently of these alterations, it becomes thickened for two-thirds of its extent, opaque, chaffed, and its exfoliated surface is reddish and unequal; and what is remarkable, a well-marked line of demarkation separates the diseased from the sound parts, ordinarily represented by a surface beginning a little beyond its lunated portion where the nail preserves its luster, polish and its color. In some cases, however, the alteration of the structure is general, and the nail is converted into a dry, grayish, chaffed, and very friable production. This form, well known to the ancients, is, I repeat, very common; it is even rare for syphilis to exist for any length of time without involving, to a greater or less extent, the nails. It is always secondary. Sometimes it is the only symptom which reveals a consecutive syphilitic affection."*

The following is an example of ulceration of the matrix of the

* Cazenave, *Traité des syphilides*, p. 429.

nail; the last figure in plate 6 was taken from this subject. The patient, Teurtrier (Auguste) was twenty-three years of age, a cook by profession, of a lymphatic temperament, and an impaired constitution. He was admitted on the 13th Sept., 1851, into Ward 9, No. 13.

Sept., 1850. Blennorrhagia which lasted five weeks, without complication. Cured entirely by copaiba.

Oct. Bubo treated by M. Puche, who has furnished information of the existence of, 1st, two indolent adenities; 2d, an enlarged cervical ganglion on the left side. He left uncured on the 1st November, after having taken three ounces of the bromide of potassium.

March, 1851. Blennorrhagia which lasted ten days; there was a scanty muco-purulent discharge, which ceased completely under the influence of injections of Goulard's extract.

June, 1851. Inguinal bubo on right side, painful, treated by antiphlogistics. At present, no ulceration on the glans or around the anus. Five weeks before the appearance of the bubo, patient suffered very intense peri-articular pains.

July, 1851. Ulceration of the anus. From this time the patient commenced to take pills prescribed by a physician in town. This ulceration lasted four or five weeks; at the time of its cicatrization (August), the right testicle very soon became inflamed, and painful; nevertheless, by the aid of a suspensory bandage he was able to work. The left testicle became in like manner speedily attacked. Towards the end of August, an exanthematous eruption appeared on both lower extremities. At the same time crusts formed at the roots of the hair, and the latter began to fall; further, the ulcerations invaded the matrix of the nails of the middle and ring-finger of the right hand. Fifteen days afterwards, the patient presented himself at the *Hôpital du Midi*. There was no discharge, nor were there any traces of ulceration about the anus, which did not have an infundibuliform appearance. On the lower extremities was an eruption of roseola, which at certain points had become converted into yellowish patches, and was undergoing a kind of desquamation. There were enlarged cervical and inguinal glands, but they were not painful. Both testicles were enlarged, and the epididymis was particularly the seat of the engorgement. The tunica albuginea was not hard to the touch. The right testicle was more engorged than the left; both were nearly insensible to pressure. The nail of the ring-finger was lost, and the whole matrix invaded by a grayish ulceration, secreting pus of an offensive odor. The nail of the middle finger was destroyed towards its root. The lunated form was destroyed and the nail distorted, as represented in plate 6. The patient had suffered at the ends of his fingers, but at the time of his admission these pains had ceased.

19th. Was placed under the influence of iodide of potassium; forty-five grains in the day.

25th. The induration of the right testicle has entirely disappeared; there remains only a very slight sensibility to pressure. The patient demands his discharge; he would not finish his treat-

ment at the hospital. In addition to the fact of the existence of a remarkable ulceration of the matrix of the nail, we here find both testicles affected with what is called syphilitic sarcoceles, and yet the epididymi alone were engorged; even the substance of the testicle was intact, which is contrary to the opinion of those who pretend that syphilitic sarcocele affects exclusively the gland itself. The general treatment of onyxis is that of confirmed syphilis. However, as it is a symptom of deep infection, and as it is often observed in feeble subjects, we should not insist too strongly on the use of mercury alone, but combine it with the iodide of potassium. It will have been remarked that the subject of the case just reported had taken the preparations of iodine only; this was owing to the fact that he was feeble, and that the affection of the testicles was a proof of confirmed syphilis. It was my intention to add the proto-iodide of mercury when the patient regained his strength; but, as has been stated, this patient would leave the hospital immediately after he began to improve.

As to the local treatment, it must vary according to the more or less acute character of the onyxis, and according to the pains of which it may be the seat, and the period of the disease.

Local emollient baths, to which laudanum may be added, cataplasms of the same nature, should be preferred when the inflammation assumes an acute character, and when the pains are severe. When the inflammation has been subdued, the local treatment should be confined to dressings with calomel cerate, applied after washing the part with a dilute solution of chlorated water. Finally, in case of indolent fungous ulcerations, we should cauterize gently with the nitrate of silver three times in a day, and dress the part with the plaster of *Vigo*.

SECTION III.

AFFECTIONS OF THE MUCOUS MEMBRANES.

The mucous membranes are too intimately connected with the skin not to participate in its diseases, especially when the essential cause of such diseases is a poison. We see, indeed, in all cutaneous affections resulting from morbid poisons, the mucous membranes suffering to a greater or less extent, and, generally, the manifestations are chiefly apparent in the throat, nose, and respiratory passages. Thus, in scarlatina, there is a characteristic angina; in rubeola, the lining membranes of the nose and larynx are affected, and every one knows that coryza is not rare in variola; in miliaria, the lining membrane of the mouth becomes involved, as shown by apthæ, and sometimes there is an eruption on the tongue which deprives it of its covering.

In the syphilitic eruptions, we also find analogous affections of the mucous membrane of the throat, and especially that of the

mouth, and, it may be said, that in almost all the external, there are also internal syphilitic eruptions. Like the affections of the skin, those of the mucous membranes are often followed by ulcerations, and indeed such a termination is more frequent in the latter than the former situation; these solutions of continuity assume an elongated form, and constitute what are called rhagades. It is observed particularly at the anus, on the tongue, and the corner of the lips. The affections of the mucous membranes, moreover, afford the strongest evidence of constitutional syphilis, but, in general, they are not of a grave character, and speedily disappear under the mercurial treatment; but these affections are also most readily and speedily reproduced, when this treatment is neither methodical nor complete.

Modern writers on syphilis are not content to show the coinci dence of the cutaneous affections and those of the mucous mem branes; some, as, for example, MM. Babington and Baumés, re cognize a repetition in the internal membranes of the forms of eruptions described in the preceding section, when the syphilitic eruptions, properly so called, were discussed.

In treating of the most important of these affections of the mucous membranes, we shall see whether such an opinion is perfectly correct. I shall commence with those of the membrane lining the buccal cavity, as this is the most frequent form of the internal eruption.

I.—MUCOUS MEMBRANE OF THE MOUTH.

M. Baumés establishes three forms of this affection:

1st. The angina, corresponding to the syphilitic exanthemata, appears in patches more or less irregular, of a more or less lively red color, sometimes whitish at the centre, without tumefaction, or with a very slight tumefaction of the mucous membrane, occurring on the palatine arch, the velum palati, the pharynx, internal sur face of the lips, and cheeks. These patches are of short duration; they disappear simultaneously with, or even before the cutaneous eruption. According to M. Baumés, if this form seems to be uncommon, it is because the syphilitic exanthemata are themselves unfrequent, and because, being in themselves of no great importance, and producing but little inconvenience throughout their course, they escape attention. The last reason is the best; as to the first, it does not accord with facts which prove that roseola is of very common occurrence.

2d. The form of angina coinciding with the papular eruption consists, in the first place, of genuine mucous tubercles, that is, flat elevations, of a circular or oval form, but less prominent and less distinctly circumscribed than on the skin. Their surface has sometimes a slightly granular aspect. Their color is a little deeper than that of the surrounding mucous membrane; they inflame but slightly, and are not more difficult to destroy than the mucous tubercles of the skin. In speaking in the first section of the mucous tubercles, I have mentioned these papules found at the

commissure of the lips, within the lips and cheeks, on the velum and the pillars of the velum palati, and even towards the sides of the base of the tongue. Sometimes the papules assume the form of tubercles; in that case they somewhat resemble the papillæ on the base of the tongue, when the latter are morbidly developed, but, unlike the latter, they are not painful, nor are they seated on the edges and even on the point of the tongue. These elevations are sometimes wrinkled and elongated, and they speedily terminate by resolution. These little tumors do not ulcerate unless irritated by stimulants, or by rubbing against an adjoining, angular and cutting tooth.

3d. The third form corresponds with the squamous variety, not in the presence of scales, the formation and sojourn of which on the surface of the lining membrane of the mouth are not possible, but in the disposition of the patches, the elevation, tumefaction, and redness of the mucous membrane, which, at one point, particularly the central portion of these patches, presents the epidermis raised, of a whitish color, wrinkled, and on its separation a very superficial, grayish ulceration. It is very probable, says M. Baumés, that if the epidermis, raised and constantly macerated by the fluids which fill the mouth, were not soon detached, a true, thin, and very extensive scale would be formed. This variety is met with on the palatine arch, the velum, the pillars of the fauces, the tonsils, the internal surface of the lips, and even of the tongue. This is of longer duration than the preceding variety.

4th. According to M. Baumés, there is a pustular form corresponding to the pustular syphilitic eruption, but as the elevated epidermis is soon detached, as it is speedily destroyed, and is replaced by ulceration, it becomes confounded with the following variety.

5th. This fifth form should correspond to the ulcerated syphilitic eruption. It is, according to M. Baumés, the most common, and that which gives rise to the most important considerations relative to its progress, duration, gravity, and the ravages it may commit in the mouth, and that, in fine, in which all the others terminate, when they become exasperated by any irritating cause. There must exist some varieties, but it is not always an easy matter to distinguish them from ulcers produced by other causes. The very commencement of these superficial ulcerations, by a white or grayish surface, of which the circumference, without forming distinct edges, easy to be recognized as in the other ulcers, blends insensibly, as by a sort of levelling with the more depressed ulcerated part, occasionally presenting such an appearance as to produce the impression that no ulceration exists.

The circumference of these ulcerations is ordinarily, for a greater or less distance, of a deep red color, which contrasts with the dull white of the ulcerated surface. This surrounding redness is particularly remarked when the ulcers are seated on the velum palati, the pillars of the velum, and the tumefied tonsils. It is often absent in the ulcers on the lips, within the lips, and on the internal surface of the cheeks. Occasionally the whole bottom of the

mouth is lined with this kind of ulcerations, which is attended with a sensation of uneasiness and dryness rather than of pain, and does not interfere with deglutition unless deeply seated towards the base of the pillars of the velum palati. From the aspect and the irregular form of this affection, one might suppose that the parts had suffered from a burn of the first and second degree. According to the physician of Lyons, this is the kind of ulceration which forms the most important part of the constitutional symptoms of blennorrhagia.

In the second variety, the chancrous form is more strongly marked. The ulcer is superficial, though it involves the greater part or the whole of the thickness of the mucous membrane, has a grayish, granulated base, its edges are irregular, sometimes detached, the circumference but little or not at all red colored, situated on the tonsils, the pharynx, the pillars of the velum palati, the internal part of the lips and cheeks. Very frequently the parts adjacent to the dentes sapientiæ become invaded, or the points even through which these teeth protrude or are about to protrude; we should guard against confounding the ulcers under consideration with those produced by the cutting of these teeth, at which time the mucous membrane is already disposed to inflame and to become tumefied. In the normal state, this membrane ordinarily tolerates, without lesion, the pressure of teeth, or fragments of teeth, however irregular they may be; but when it is irritated and inflamed, these teeth, or portions of teeth, wound it, and give rise to ulcerations, which, at first view, might not be readily distinguished from the venereal ulcers in question, even after inquiring into the antecedent or concomitant circumstances. The syphilitic ulcer is of long duration, is more obstinate, more difficult of cure than the preceding. It leaves a cicatrix on the mucous membrane, which continues for a long time, remaining smooth, whiter and more brilliant than the adjacent healthy mucous membrane.

The third variety affects at first and almost exclusively, the tonsils. The ulcer resembles a primary chancre, and without causing a previous tumefaction of the tonsils, "digs them out as it were with a punch;" it has a yellowish base, and a circumference of a deep red color, extending in every direction, sometimes the redness involves the whole surface of the tonsils and the surrounding parts, invading at times the orifices of the Eustachian tubes, and producing deafness or an alteration of hearing, much more frequently than the preceding ulceration. In some instances, this ulcer, in the first place, produces neither pain, inconvenience, nor impediment in deglutition; and if the patient's attention be attracted by either of the above circumstances, he is surprised to find that the ulcer has already made considerable progress. The latter is generally chronic, and attended with but little general disturbance. Occasionally, however, the inflammation is severe.

In the fourth variety, the progress of the ulcer in its incipient state, resembles in part that of a phagedenic ulcer, with or without

superficial gangrene. It is particularly in this variety, that the ulceration is preceded and accompanied by pains which are sometimes very severe, with febrile reaction, a difficulty or impossibility of swallowing, a change of voice, as well as of hearing, resulting from the extension of the ulcer to the uvula, the base and posterior part of the velum palati, the posterior and superior surface of the pharynx, the posterior and even superior part of the velum palati, bordering on the nasal fossæ. These, together with the tonsils, are indeed the parts which are the most common seat of these ulcerations. They are, however, likewise observed on the internal surface of the lips, and the inner and posterior surfaces of the cheeks. The progress of the phagedenic inflammation is sometimes so rapid that the osseous tissues of the palate, behind the pharynx, and the nasal fossæ, become involved, in which case matters assume a more serious character. The progress of the ulceration is generally more rapid than in the preceding variety.

It is probable that the different forms described by M. Baumés* correspond to the cases which he has observed. But I am of the opinion, that both in a theoretical and practical view of the subject, we must here invoke the aid of synthesis. I shall therefore reduce to two varieties, the different forms of ulcerations in the buccal cavity; 1st, the superficial variety, which is sometimes limited to a slight erosion, and which, in the majority of cases, does not extend beyond the mucous membrane; it is that which accompanies the syphilitic eruptions, and which, in its course more or less resembles them; 2d, the other, deep-seated; destroying the mucous membrane as well as the parts beneath, and the affection does not generally commence in the mucous but cellular tissue beneath, as in the case of syphilitic tubercles, and it may also commence in parts still more deeply seated. This form of ulceration may be observed in the absence of the eruptions, frequently after the cutaneous affection has disappeared, and even in the last stages of syphilis. It is ordinarily preceded by a tumefaction, partly inflammatory and partly œdematous, of the parts about to be affected, which tumefaction impedes both deglutition and phonation. Sometimes an ulceration, the most profound, which destroys the uvula, the velum palati, or a tonsil, becomes known to the patient only by the functional lesions produced, which are often very slight, the patient in this case reposes in the most perfect security. But soon the mucous membrane becomes destroyed to a greater or less extent, and then an ulcer with perpendicular edges appears, its edges are more or less serrated, and it is surrounded by a red, œdematous tumefaction, whilst its base is covered by a grayish-yellow false membrane. Occasionally both the uvula and the velum are destroyed, the progress of the ulceration may be here very insidious, as it sometimes commences on the posterior surface of the velum. In other instances the posterior surface of the pharynx becomes attacked; then, if the ulceration is not very extensive, and is central, we may observe its yellow base, and

* *Baumés*, t. ii.

more or less tumefied borders. There are cases, however, in which we cannot define the limits, for the ulcer cannot be entirely exposed, neither by depressing the tongue, nor elevating the velum to the utmost possible extent. When the ulceration is thus extensive, the tumefaction of the edges is considerable and involves the Eustachian tube, and produces deafness. Sometimes both tonsils are affected with this deep-seated ulceration, but never to the same extent. Sometimes one only becomes excavated, the other remaining sound. This ulceration may be observed even on the tongue, either at its base or on its borders. A patient affected with these profound ulcers generally complains of suffering nocturnal pains, and when the pharynx is their seat, there is difficulty of deglutition and phonation, with pain in moving the neck. Whatever may be the form of ulceration, its depth, or its connection with other syphilitic accidents, the sub-maxillary glands may or may not become enlarged.

There is a double motive for carefully studying this last form of ulceration; in the first place, it sometimes progresses with great rapidity, and may thus commit the worst ravages in a short time, and in the second place, because treatment is here most triumphant; indeed, the iodide of potassium, administered in season and in large doses, will sometimes cause these ulcers to disappear as if by magic.

Inoculation of a Consecutive Ulceration of the Tonsil.—Dr. L. wishing to ascertain if the pus of a secondary accident under the form of an ulcer could produce a syphilitic accident, performed an experiment in my amphitheatre, which I have reported to the *Société de Chirurgie.* I insert in this place an extract from a report made by M. Begin, in the name of a Commission, of which M. Ricord formed a member.

"For the purpose of giving a greater degree of certainty to a hygienic measure, proposed in the treatment of chancres of not more than ten days' duration, Dr. L. performed during the months of December and January, 1850–51, an inoculation with the pus of chancre, nearly every five days, which were made to cicatrize in four days by the application of cold-water lotions.

"Three months after this first series of experiments, on the 2d of May, a friend of Dr. L. himself a physician, consulted the Dr. for an indurated chancre, contracted some seventeen days before, and which was seated in the groove at the base of the glands. After a little more than a month's duration, on the 17th May* the chancre was cicatrized; the treatment is not mentioned.

"Twenty-three days afterwards, a roseola, preceded by pains, appeared, and soon become complicated with an enlargement of the sub-maxillary glands, on both sides, and of the superficial and deep-seated glands on the right side. About the same time, that is on the seventh day after the appearance of the eruption, a *profound ulceration* was discovered on each tonsil, with *fissures* on the

* I copy literally from the report published in the *Bulletin de l'Académie de Médecine.*

tongue. This organ together with the whole buccal cavity was somewhat inflamed. These last-developed accidents were cured in thirty-four days after the first manifestation of the roseola.

"At this period, the twenty-second day of the existence of the chancres on the tonsils, (expression of M. Begin; they were not chancres, for a chancre is a primitive, whilst this was a consecutive ulceration,) our experimenter resolved to inoculate himself with the matter which they furnished. With this view, two hours after he had carefully cleaned the surface of the left tonsil, he collected the serous, for it was hardly purulent fluid, which was secreted, and with a new lancet inserted it by a very superficial puncture on the anterior surface of the left arm. For the first ten days after the inoculation nothing in particular was observed, but on the eleventh, Dr. L. discovered a small pimple of the size of a pin's head, of a red color, and remarkable hardness, without an areola, and it was not painful even when pressed with considerable force. Towards the fifteenth day, this pimple, which had gradully increased in size until it had attained that of a lentil, became covered with crusts, which were united into one, and beneath it existed a reddish serous fluid. The latter furnished the matter used for the inoculation, four of which were repeated every fifth day, for twenty days, some twenty successive inoculations having in all been made."*

It will be seen, even according to the report of M. Begin, that Dr. L. did really succeed in inoculating a secondary ulceration of the tonsil. His friend had had, in fact, a previous chancre, roseola, and afterwards ulcerations of the tonsils. Add to this, that the ulceration resulting from the experiment, occurred after a period of incubation. M. Chausit, who published the details of this experiment in the *Annales des maladies de la peau et de la syphilis*, observes: "This case, important when regarded in view of the object for which it was undertaken, and of the results already mentioned, presents, it must be acknowledged, great scientific interest; when regarded in reference to syphilization it may shed a sad but strong light on this newly-developed principle.† M. Vidal (de Cassis) has fully presented this case in all its bearings. The important case, therefore, which is now furnished to science is at the same time a new proof of the inoculability of secondary syphilitic accidents, and in connection with this subject we must also notice another very important fact already placed beyond question by those furnished by Wallace and Waller, viz. the period of incubation intervening between the date of the inoculation and the time when the first specific accidents were manifested.

* The report goes on to expose the experiments in syphilization. It was read on the 21st of January, 1852.

† M. Chausit here alludes to the exasperation of the eruption, and the aspect of the chancres, as well as the increased number with which Dr. L. was affected, for the Dr. was presented to the Surgical Society and to the Academy as a victim of syphilization. It was for the purpose of completing the report of the case, and of turning it to a useful account, that I furnished the Surgical Society with the details relative to the inoculation of the secondary accidents. M. Velpeau did the same to the Academy, and a committee was appointed to examine the matter both in reference to syphilization and the transmissibility of secondary accidents.

"The different inoculations which Dr. L. afterwards made, seem to establish, contrary to the doctrine of M. Auzias, and to the experiments of M. Sperine, that the liability to syphilitic infection does not diminish in proportion to the number of inoculations performed, and that these inoculations may not contribute to arrest the progress of the pre-existing consecutive symptoms: this is an important fact, the value of which can be appreciated by our readers. As to the question proposed by M. Vidal (de Cassis), we know with what kind of a response it will meet at the onset, but there is an important matter here to be taken into consideration, for it is connected with the character even of the subject of this melancholy case. The experimenter was a physician, and the friend who voluntarily submitted to this series of experiments, was likewise a physician, circumstances which do not permit the intervention of such suppositions as are usually urged against facts of the kind we have mentioned."

The hypothesis of a chancre has, in fact, been here reproduced, but, it must be confessed, with still less success than under other circumstances. The existence of this chancre could not be believed, because, in the first place, a primitive chancre in this situation has never been, and probably never will be, demonstrated. In the case in question, the subject of the experiments was himself a physician, who observed for himself, and who is certain that the virus of a chancre never entered his mouth. He contracted a chancre on the penis, and it was after the cicatrization of this chancre, that he had constitutional syphilis, of which the tonsillar ulceration was an evidence. The existence of an enlarged submaxillary gland has been invoked, as indicating that of a chancre. But this gland was enlarged previous to the appearance of the ulcerations in the buccal cavity, and there were others on the posterior part of the neck. Glandular enlargement, I repeat, and will ever repeat, is of no value in the diagnosis of syphilitic ulcerations in general, for it may exist in scrofulous subjects, and may coincide both with the primitive and consecutive ulcerations; it may doubtless exist in constitutional syphilis, yet the system may be completely infected, and yet the subject of this infection may be perfectly free from glandular enlargement in the neck or other regions. At present, there are in my service at the *Hôpital du Midi*, two patients who are daily exhibited to the students: one of them, a coachman, has superficial ulcerations on both tonsils, which appeared shortly after the cicatrization of a chancre on the penis, and in this patient, the sub-maxillary glands are enlarged; in the second, there are ulcerations on both tonsils, but they are more profound, and occurred at a later period; in this patient, the sub-maxillary glands are also enlarged. The chancre in the latter patient had existed for a year previously, and was situated on the penis. Both of these patients were questioned in every possible manner to ascertain whether direct infection could have occurred. In both cases, it was positively established that the ulcerations in the throat were consecutive. I retained these patients, and particularly the coachman, a long time in the hospital. We may

therefore, appreciate the value of glandular enlargements in the diagnosis of ulcerations.

Treatment.—Here we must not forget the two principal varieties which I have established; the one, superficial and peculiar to the first stages of constitutional syphilis; the other profound, and corresponding particularly to the last stages of the diathesis.

1st. The first variety, consisting of superficial ulcerations, and co-existing with a syphilitic eruption, should be treated with the proto-iodide of mercury internally, according to the formula mentioned while considering the treatment of the *so-called consecutive venereal accidents.* We will here add another for a gargle to the parts:

℞. Decoction of Oatmeal, ℥ iii.
Honey, ʒ vi.
Van Swieten's Liquor, ʒ iiss.

2d. In the second variety, when the ulceration appears late, is deep-seated, and occurs after the eruption, co-existing with the affections of the fibrous and osseous systems, we must employ the iodide of potassium, according to the formula described in treating of this therapeutic agent and its mode of administration. At page 312, I have stated that I use one and a half ounces of the iodide of potassium to eight ounces of water, thus making fifteen grains of the iodide to a spoonful of this solution. Three spoonfuls may be given in the day; seldom should the dose be increased to six spoonfuls. The gargle already mentioned may be employed, but instead of the two and a half drachms of Van Swieten's liquor, we may substitute the same quantity of the iodide of potassium. M. Ricord frequently recommends the following gargle:

℞. Aq. dist. ℥ viss.
Tinct. Iod. ʒ iss.
Iod. Potas. grs. xv.

I have more than once observed that this gargle greatly irritates the throat. I therefore prefer that which does not contain the tincture of iodine, but the iodide of potassium in a somewhat considerable quantity. We should not always wait for the ulcerations in the buccal cavity to become profound before we resort to the iodide of potassium, both as an internal remedy and as a gargle. In order that the mucous membrane may not be destroyed, and the ulcerations become chronic, recourse must be had to this powerful agent, especially if the subject be debilitated. In such, mercury should be proscribed. In other cases, both of these agents may be united, and act conjointly, as I have already shown.

In both varieties we may employ cauterization with hydrochloric acid or the nitrate of silver. These means may be adopted in cases of mucous tubercles, especially when they cover a portion of the cheeks, the internal surface of the lips, and when there is not great inflammatory turgescence. When the ulcerations are profound, and of late development, and when they co-exist with

affections of the bones, the best remedy is still the iodide of potassium, both internally and in the form of a gargle, but in large doses. Cauterization may be attended with inconveniences during the first stages of the ulcerations; it is better then to touch them with the following mixture, recommended by M. Baumés:

℞. Mel. Ros.	ʒ ii.
Laud. of Sydenham,	♏. xv.

When the parts become less sensitive, and the edges of the ulceration less tumefied, less turgid, they may be touched with

℞. Mel. Ros.	ʒ ii.
Hydro. Chlor. Acid.	♏. xv. a xx.

II.—MUCOUS MEMBRANE OF THE NOSE.

Frequently after the cure of the primitive accidents, chancre and blennorrhagia, and when it is supposed that all is ended, the patient experiences a kind of a stuffing, which, unless great care be taken, is regarded as a catarrh, but which lasts for a long time. He finds at length that his nose becomes more and more affected, and soon a thick yellowish purulent matter escapes, and occasionally with thin black crusts. The sense of smell becomes impaired, and is lost, either on one or both sides. In many cases it is not until this period that the practitioner is consulted. He detects a redness with more or less fungous swelling of the mucous membrane of the nose, externally and internally, or on both sides at once extending to a greater or less height, so that it can no longer be perceived by the unassisted eye. Before this mucous membrane becomes ulcerated, that of the buccal cavity, together with the eruption, have preceded it. The affection of the nasal membrane is then regarded as a blennorrhagia, which existed previous to the ulcerations in the mouth. But at other times these ulcerations are speedily reproduced in the nostrils, within the alæ of the nose; or they may occur still higher, and penetrate more deeply to the surface of the inferior turbinated bones, so as to be difficult of detection. These ulcers may assume a phagedenic character, and destroy the different bones entering into the composition of the nose and its cavities, which may become ulcerated simultaneously with the mucous membrane.

The affection often commences in the bone; the vertical layer of the ethmoid, and the turbinated, may suffer from necrosis or caries. When those belonging to the cartilages become attacked, the nose is depressed; pressure on it produces a kind of crepitation; portions of the bone issue with the mucus when the patient blows his nose. Then we have also those profound ulcers in the nasal fossæ, which corrode the parts with or without caries of the bones, without much, or even with no suppuration, but with a fetid odor, a condition known under the name of ozœna. Ac-

cording to M. Baumés, vegetations of a more or less fungous character may form within the nose, under the influence of the syphilitic diathesis, and more than one vesicular, spongy polypus, of a more or less vascular nature, may be due to this cause. This does not accord with my own experience.

The consecutive inflammation of the nasal mucous membrane, often passes unnoticed, either because it ordinarily produces only an inconvenience and not pain, or because having an analogy to coryza, and because this annoyance about the nose may result from many other causes, the patient attaches but little importance to it. In this connection, these phenomena resemble certain others, such as a sensation of uneasiness, or of stiffness in the throat, a discharge from the auditory canal, with or without difficulty in hearing; a slight smarting in the anus, symptoms which may be due, as in the first instance, to consecutive syphilitic ulcers in the throat, in the second, to a consecutive blennorrhagia of the mucous membrane of the auditory canal, and in the third, to a *rhagade*, and yet the patient who suffers but little, or not at all, and who apparently is in usual health, never attributes these symptoms to their true cause. But this same patient, one or two years after the cure of his primary accidents, consults his physician for symptoms which are evidently constitutional. He then does not allude to the phenomena which had previously existed, because he is far from supposing that they were syphilitic, and these symptoms during perhaps a long interval of time, may alternately have increased, diminished, or have ceased entirely, and been replaced by other morbid phenomena on the part of the nervous system, or certain of the viscera. All these phenomena, however, are evidence of the long duration of the syphilitic diathesis, which has waited a favorable opportunity for a more terrible and manifest development. Examine carefully into the antecedent of the case, and you will find that these morbid affections, not very grave, yet truly syphilitic, previously existed and even yet exist, having suffered, in some manner, a transition by which the syphilitic symptoms now apparent have been produced. These things I have often seen in my practice, and I doubt not that they have been observed by many other practitioners; I have also remarked that, when an individual complains, some three, four, or five years after this cure of the primitive symptoms, of suffering, for the first time, from troubles which are unquestionably syphilitic, it is very rare that phenomena similar to the preceding have not existed, sometimes constantly, at others being of an intermitted, irregular or periodical character, or occurring with the seasons, &c. I have never seen, for example, the syphilitic corroding dartre established on the alæ of the nose by tubercles, unless there had previously existed, for a longer or shorter period, a chronic coryza more or less obstinate, and which was produced by the same syphilitic diathesis.

It is evident here as well as in the buccal cavity, there are two stages, two varieties of ulceration: 1st, the more superficial, which precedes and afterwards accompanies the syphilitic eruptions, and

which rarely involves the parts beneath the mucous membrane: 2, that which occurs at a later period, which belongs to the last stages of syphilis, is profound, and always compromises the bones or the cartilages.

In the treatment we must be governed by the rules already prescribed whilst treating of affections of the throat, that is, we should administer the proto-iodide of mercury in the first, and the iodide of potassium in the second variety. In the case of ozœna, we may inject the following solution into the nasal fossæ.

℞. Aq. dist., ℥ x.
Sod. Chlorid. ℥ iiiss.

[We have used injections of chloride of zinc, from three to six grains to the ounce of water, with the happiest effects.—G. C. B.]

III.—MUCOUS MEMBRANE OF THE GENITAL ORGANS.

Consecutive syphilis may affect the mucous membrane of the genital organs, in the same manner as in the primitive accidents. Thus consecutive urethral blennorrhagia has been observed, as has been balano-posthitis; of this a case together with an illustration may be found in the first section of this word. In the female, whose genital mucous membrane is so extensive, we too frequently meet with discharges which are inordinately protracted in consequence of constitutional syphilis, the existence of which they persist in denying, and which, consequently, is not subjected to treatment. All the instances of consecutive blennorrhagia, are more or less chronic in their progress, and are attended with no marked excitement; they are in fact more properly cases of blennorrhœa.

They are not detected, or rather, their nature is not suspected until long after the occurrence of the primary symptoms, or when they accompany some other accident which is decidedly consecutive, as for example, a syphilitic eruption. And yet it is not unusual to attribute the discharge in both instances to a new contagion, and which besides may be they cause. Thus, we see, that the diagnosis of discharges resulting from constitutional syphilis is not easy, especially when we are unable to inspect directly the diseased mucous surface. When we have it in our power to examine it, we discover that it is not of a very bright redness, and that it has a tendency to assume the coppery color peculiar to the secondary affections. In plate 1 are two figures: one representing acute posthitis entirely primitive; the other a consecutive and chronic balano-posthitis. The redness in the latter is browner and darker than in the preceding figure. The consecutive ulcerations of the genital mucous membrane are generally not so well defined as those which are primitive, like chancres, and reparation soon takes place, though the ulceration is speedily reproduced. These ulcerations occur on the prepuce, the internal surfaces of the labia, majora and minora.

It is sometimes difficult to distinguish these consecutive ulcerations from that disposition to excoriations which the genital mucous membrane manifests when it has already been the seat of a primitive lesion which has lasted for any length of time; thus, we frequently observe, after an indurated chancre on the prepuce, a disposition to a morbid excitement and ulceration of the mucous membrane, which is often mistaken for a consecutive affection; the inflammation, ulceration, in these cases are liable to reappear, hence they are regarded as relapses. Most generally there is nothing syphilitic in this condition of the preputial mucous membrane, and the patient is more easily cured by topical applications and simple measures, than by a mercurial treatment. The observations apply to the ulcerations of the lining membrane of the vulva and of the whole genital apparatus in the female.

[Granular erosion of the cervix uteri is stated by Dr. Bennet to be an exceedingly common lesion, in females suffering from the secondary forms of syphilis. He is inclined to believe that the proportion is as high as three out of four cases, in secondary syphilis (*op. cit.*, 2d ed., pp. 326, 329). Dr. Egan's experience is opposed to that of Mr. Bennet. "That this condition obtains in the most virtuous description of patients I cannot for a moment doubt, but that prostitutes enjoy a peculiar exemption from this formidable lesion I am perfectly satisfied. I have looked for it over and over again, both in individuals subject to discharges, and likewise in those affected with the secondary and tertiary form of syphilis; and, *with the exception of two instances, I most decidedly have never encountered ulcerations, properly so called, either of the exterior or interior of the uterus*" (Egan, *op. cit.*, pp. 131, 132). This view of the subject is supported by the evidence of Mr. Acton. "In women who suffer from syphilis in its worst forms, in all other parts of the body, the os uteri is very seldom affected, &c.; these ulcers on the uterus are perfectly independent of syphilis in ninety-nine out of every hundred cases" (*op. cit.* p. 198). G. C. B.]

The judicious practitioner, therefore, will not be in haste to put his patient under the influence of mercury or of iodine, especially if the first has been administered for any considerable length of time and in a systematic manner. If, however, the ulceration of the mucous membranes co-exist with the syphilitic eruptions, or other concomitant lesions, of which the syphilitic nature cannot be questioned, the practitioner will then avail himself of these powerful agents.

I should here speak of the vegetations and the mucous tubercles of the genital mucous membrane, but these have already been described in the first part of this work. The reader will recollect that I then insisted on the fact that these may be both primitive and consecutive.

As to the general treatment, it is the same as that of the syphilitic eruptions. The local treatment consists principally in isolating the inflamed surfaces, and in the application of astringents. I consider that a weak solution of the nitrate of silver has astringent properties.

[We have frequently employed a solution of the sulphate of zinc, to which laudanum is added, with beneficial results The following formula answers a very good purpose:

℞. Sulph. Zinc, ʒ ss.
Aq. pur. ℥ vi.
Tinct. Op. ʒ ii. M.

Apply as a lotion. G. C. B.]

The local treatment may exert a great influence in affections of the genital mucous membrane in the female. The observations which we have already made on intra-vaginal and intra-uterine injections, should here be reperused.

IV.—MUCOUS MEMBRANE OF THE EPIGLOTTIS AND LARYNX.

There are cases in which the affection of the fauces and the pharynx extend more deeply, and involve the epiglottis, producing serious impediment in deglutition. This disease, which is generally in the form of ulceration, may affect the vocal apparatus, causing alterations of the voice much more decided, and variable, according as they involve the superior portion or whether they penetrate into the cavity of the larynx; it may likewise occasion an œdema of the glottis.*

When these ulcerations exist independently of an affection of the buccal cavity, it is often very difficult to detect their nature and to establish a differential diagnosis. According to M. Reynaud, who has carefully studied this form of syphilis, the laryngeal ulceration occurs only long after the primitive accidents. It may produce all the symptoms of ordinary diseases of the larynx, such as uneasiness, or a fixed pain on a level with the thyroid cartilage, and its extent may evidently in some cases increase the alterations of voice, the dyspnœa, the hacking cough and efforts made to expel the mucosities which obstruct the glottis, after which the patient expectorates a little purulent matter in some cases streaked with blood. The malady by becoming protracted may produce fever with night sweats, and all the train of symptoms of laryngeal phthisis. The firmer portions of the larynx sometimes participate in the disease and increase its gravity. Therefore, even in the more fortunate cases, in which we succeed in arresting the progress of the ulceration, and curing the disease, there generally remains aphonia, or at least profound alterations of the voice. The seat of the malady sufficiently indicates its gravity.

[Mr. Carmichael, in his Clinical Lectures on Venereal Diseases, p. 143, refers to a case in which from extensive ulceration of the pharynx, the lingual artery gave way, and the patient died of

* The reader may consult on this subject the *Traité de l'angine laryngée œdemateuse,* of M. Sestier, p. 88.

hemorrhage before assistance could be had to secure the vessel. He also exhibited preparations in his lecture, showing the necessity, in some cases, of resorting to tracheotomy in these distressing cases.—G. C. B.]

The treament is similar to that of the consecutive affections of the buccal cavity; but if the affection continues obstinate, remaining long after the subsidence of the tertiary symptoms, we must then resort to the use of iodine. In some cases even in spite of this remedy, the disease seems to continue, but it is then maintained by a necrosis, the dead portion acting as a foreign substance, and though the syphilis be cured, the patient is far from being saved.

V.—MUCOUS MEMBRANE OF THE EAR.

The mucous, or rather the semi-mucous lining of the ear, may become affected by constitutional syphilis. In treating of mucous tubercles, I mentioned a case in which the patient's whole body was covered; they occupied both auditory canals; in one, was seen the raised papula, accompanied with a slight discharge; in the other, there were ulceration of a dark brownish color, and a true otorrhœa. Hearing was not impaired. I have read, however, and we may find in the work of M. Baumés, that consecutive discharges from the ear coincide almost always with more or less dulness of hearing. True, the physician of Lyons intends his remarks to apply to greenish-yellow discharges. Those which I have observed consisted of a dirty, offensive serum. Cases have been described in which the ulcerations had the character of those belonging to constitutional syphilis; they were seated both at the entrance of the auditory canal, and at a greater depth, the latter being discovered only by the aid of the *speculum auris*. In such cases there is necessarily more or less of a discharge. According to M. Baumés, during the continuance of the discharge, *soft, fungous, pediculated vegetations* are to be seen in the auditory canal. I believe that these are most commonly mucous tubercles, at least such is the result of my own observation, and that the matter discharged proceeds from these tubercles. I have never seen anything in the ear that could be compared to true pediculated vegetations. Of course, I do not include polypi in these remarks, as they have nothing in common with syphilis.

When I have been called upon to treat mucous tubercles of the auditory canal, I have administered the proto-iodide of mercury internally, and have confined my topical applications to cleanliness. Lotions with diluted Goulard's extract, or with a dilute solution of the chlorides, and the insertion of cotton in the canals, may prove of service.

VI.—MUCOUS MEMBRANE OF THE ANUS AND RECTUM.

In speaking of blennorrhagia, in the first part of this work, I stated that anal discharges were most frequently the result of con-

secutive affections. These discharges generally proceed from consecutive mucous tubercles; but the most abundant source of the matter is particularly the mucous membrane surrounding these tubercles, which is the seat of a consecutive blennorrhagic inflammation. The vegetations, and especially the mucous membrane by which they are surrounded, may also secrete more or less matter. These vegetations, in the great majority of cases, are consecutive affections. They may invade the mucous membrane to a much greater height than the mucous tubercles, which are always developed on the margin of the anus, and rather encroach on the nates, where they spread and multiply. On the contrary, the vegetations form high in the rectum, even on the lining membrane of this portion of the intestine, as may be seen by the speculum, or when the patient makes strong bearing-down efforts, as in going to stool.

These ulcerations of the rectum, and particularly of the anus, are of frequent occurrence. In the majority of cases, they assume an elongated form, and are known by the name of *rhagades*. They have a grayish-yellow base, with edges more or less indurated and irregular. They may be seen completely when the patient forces down the parts, as in going to stool. They are much less painful both to the touch and during the act of defecation, than is the fissure of the anus, and we do not observe that disposition to syncope which is common to the latter affection. There is another kind of ulceration which is more superficial; it is observed in blennorrhagia, and is rather an excoriation, like that of balanitis. M. Baumés has met with greenish discharges from the anus, conjoined with other syphilitic symptoms. He examined with the speculum, and found the mucous membrane red and thickened, and as if granulated at certain points, without ulceration. But generally, with the puriform discharge there is ulceration, the latter may occur without previous engorgement or induration of the mucous membrane. According to this writer, they may be found in large numbers very high in the rectum.

The general treatment of the consecutive affections of the anus is that which has been recommended for the same morbid conditions in other mucous membranes. The local treatment consists particularly in the observance of cleanliness. Hip-baths should often be used. The anus should be filled with charpie or carded cotton. That portion of the mucous membrane which admits of being exposed, may be cauterized with the nitrate of silver. Injections of Goulard's lotion, or a solution of the nitrate of silver, may be used when the affection extends to any great height. We should avoid injections containing laudanum. I have seen poisoning produced which threatened the most deplorable consequences, by injecting a solution containing sulphate of zinc and a large proportion of Sydenhams's laudanum.

SECTION IV.

DISEASES OF THE EYES.

In the first part of this work, I have already described a serious affection of the eyes, which commences in the more external membrane, the conjunctiva; it is one of the *so-called primitive venereal accidents*, a form of conjunctivitis. A consecutive conjunctivitis has been mentioned, or rather it has been supposed, for what has probably been regarded as a manifestation of secondary syphilis in the ocular mucous membrane, was probably a chronic conjunctivitis succeeding to a blennorrhagic ophthalmia, or it may have been the latter in a protracted state, or a conjunctivitis dependent on some other diathesis which cannot be determined. As to the lesions of the other tissues of the eye, they are still more problematical, or if they have indeed been observed, it was in severe cases of iritis with extension of the inflammation, or, more properly speaking, in complicated cases. Thus, writers speak of a complete disorganization of the globe of the eye resulting from syphilitic iritis. Mackenzie alludes to this accident, and I have now in my service, Ward 11, a patient who has passed through all the stages and demi-stages of syphilis: he has a sunken eye. It was not long after this profound lesion that we saw him, so that we were able to note the starting point of the ophthalmic affection. We obtained sufficient proof that he had not blennorrhagia at the time when the eye became affected, so that the eye was not in this case lost, as is observed in a severe case of blennorrhagic ophthalmia, but it was the result of a lesion occurring during the development of various consecutive accidents, or, probably, of an accident itself of this nature, but of a much more serious character than that which is most commonly observed, viz., syphilitic iritis. The iris is indeed most commonly affected when the virus has infected the whole organism; and this lesion alone is noticed by some writers on venereal diseases. I will devote a paragraph to it.

SYPHILITIC IRITIS.

M. Ricord, in his Notes to Hunter, thus remarks: "There is a secondary accident to which Hunter has not alluded, because it escaped the *laws which he had established*, or what is very probable, because he was ignorant of the disease." I quote *verbatim*.*

Causes.—Syphilitic iritis is so intimately connected with the affections of the skin, it occurs so frequently in their train, that it may be regarded as one of the accidents of the syphilitic eruptions. It is for this reason that I treat of this disease immediately after the affections of the skin and mucous membranes.

* Hunter, 2*d Ed.*, *Note* by M. Ricord, p. 648.

Attempts have been made to determine what form of syphilitic eruption is more frequently followed by syphilitic iritis. According to M. Legendre, it is the papular and the pustular varieties, (*Thesis already quoted.*) Mackenzie states that his experience has shown that the pustular and squamous eruptions on the face and trunk should take the first rank, whilst the second should be assigned to the syphilitic affections of the throat. "The pustules on the face," says Mackenzie, "which I have observed to coincide with syphilitic iritis, were often voluminous, hard, and penetrated the skin so deeply that they almost deserved the name of tubercles. The squamous eruptions on the face sometimes resembled the areolar form of lepra. On the body, where the eruption had generally a more acute character, it appeared under the form of numerous circular elevations, of a brownish-red color, about half the size of a pea, and terminating by a succession of thin pellicular desquamations of the epidermis."*

M. Ricord admits three degrees of syphilitic iritis. According to this writer, if the patient is affected with the syphilitic exanthemata, rubeola, the iritis coincident with this form of eruption, with other things being equal, will be less intense, forming what is known under the name of *erythematous iritis*, and which some ophthalmologists call *serous iritis*. There is another iritis accompanying the papular form of eruption; in this variety, under certain circumstances, vegetations are observed, which Beer has compared to condylomatous vegetations; but most frequently, says M. Ricord, we observe on the iris *genuine papules*, more or less prominent, of the size of a grain of millet seed, and of a copper-red color. Finally, when the iritis co-exists with a vesicular or a vesico-papular eruption, we discover on the iris true vesicles, vesico-pustules, and we may even say, small ecthymatous pustules. Each principal form of cutaneous eruption should therefore have its prototype on the iris. Such is the opinion of M. Ricord. Thus we have not only a syphilitic iritis but several varieties corresponding to the several syphilitic eruptions. And yet M. Ricord concludes by doubting the existence of syphilitic iritis; he seems to reject the disease, as a distinct variety, after having described three different forms! In the same note, by the same syphilographer, we read as follows: "In the absence of all pathognomonic signs, we are justified in asking, as in certain cases of pemphigus in the infant, whether syphilis does not here act like any other common cause."† So that after all, syphilis in these cases acts like cold, or any other non-specific exciting cause; and this, too, for the reason that this iritis has not a specific character by itself. As if the antecedents, the progress of the malady, its relations with other concomitant circumstances, such as the syphilitic eruptions, and the whole pathological history of iritis, were not equal to an anatomical character in establishing its nature!

* Mackenzie, *Maladies des yeux*, p. 377, translated into French, by MM. Laugier and Richelot.

† *Vid. Notes to Hunter*, p. 682, 2d ed.

[Among the writers who first described syphilitic iritis as a distinct disease, were Prof. Schmidt, of Vienna, and Mr. Saunders, of London. Although the highest authorities of the present day, such as Messrs. Lawrence, Jones, Hilton, and Mackenzie, as did Mr. Carmichael, regard it as a specific affection of the iris, there are others, as observed by our author, who can see in it nothing to entitle it to such a distinction. Mr. Porter objects to the term iritis, believing, as he does, that all, or almost all the other structures participate in the disease. "I have seen patients become blind long after every symptom of the 'iritis' had disappeared, and I have witnessed the unpleasant situation in which a surgeon was placed, who had, under such circumstances, pronounced his patient cured. I prefer, therefore, that name which tells us and keeps constantly before us the fact, that all the deeper structures of the eye are engaged—deep-seated syphilitic ophthalmia," (Lect. in *Dub. Med. Press.*, April, 1847.) Mr. Morgan believed, and this is the doctrine, if we mistake not, of Mr. Travers, that the form of iritis under consideration is due to the conjoint agency of syphilis and mercury, but Mr. Lawrence has quoted a number of cases in which mercury had been given in some quantity, for the cure of the primary sore, in about one-third of the whole number; very little, in about another third, and no mercury at all in the remaining third, and yet iritis supervened. Similar results followed the non-mercurial practice of Messrs. Rose and Thompson.—G. C. B.]

Symptoms.—Diagnosis.—In the first place, I should remark, that iritis, whatever may be its cause and nature, may present the following characters: 1st. A particular vascularity of the opaque cornea and even of the iris; 2d. A modification in the motions and form of the pupils; 3d. A production of lymph, of a more or less purulent fluid, and adhesions; 4th. Impaired vision and pains in the eye and around the eye, and even beyond this region, but always confined to the head. Thus, we have what is called Zonular sclerotitis, that is, very fine vessels, which run like rays towards the margin of the transparent cornea. The color of the iris is changed by an abnormal vascular development, or the production of lymph, in its substance, or on its posterior surface. If it is naturally blue it becomes green, and if of a red disk color it changes to brown. The pupil contracts and its motions are impaired or destroyed. The lymph of which I have spoken may be effused in the posterior as well as the anterior chamber of the eye. This same lymph may become organized on certain portions of the membranes, forming bridles and producing adhesions of the margin of the pupil to the capsule of the crystalline lens, and sometimes, though more rarely, to the cornea. These morbid productions may assume the form of tubercles, or of pustules; we then have, in the majority of cases, abscesses in the iris. Finally, there are subjective symptoms relating to vision, which is more or less disturbed and sometimes destroyed, and there are circumorbitar pains, which may be nocturnal. These characters are not observed in

all cases of iritis, but they may be met with from whatever cause the disease may occur.*

The Germans, at the head of whom stands Beer, describe among the characteristics of a specific iritis, a peculiar distortion of the pupil, and the development of what are called condyloma on the iris. The first is produced by a gradual contraction of the pupil from without inwards; instead, therefore, of being in the centre of the iris, it is much nearer its superior internal border, thus causing a deformity, a laceration of the pupil, converting its grand axis obliquely from below upwards, and from without inwards. This distortion may certainly occur during the existence of syphilitic iritis, but it is also observed during that of rheumatic iritis. Further still, by following the different phases of syphilitic iritis, we may observe both this distortion and that in the opposite direction. This character, therefore, is governed by no law; it may depend upon the adhesions to the crystalline lens and the effects of belladonna so frequently employed in the treatment of iritis. If the adhesions no longer exist at the time when the belladonna is employed, the pupil will dilate equally in all directions, presenting not the slightest deformity. If, however, adhesions still exist, the dilatation of the pupil will then be irregular, and then only do we perceive distortions of the pupil; they result from the action of the belladonna, dilating the portions of the iris free from adhesions, whilst the position of those which are adherent remains unchanged; thence the distortions, which are not constant, and consequently cannot be regarded as pathognomonic. M. Legendre has twice seen the contracted and circular pupils dilated by the action of belladonna, and assume an oblique form from below upwards, and from within outwards, a direction the opposite of that which is regarded as pathognomonic; in another case, the pupil was vertical and lozenge-shaped; and, finally, in other instances, it could not be made to assume any particular figure. The distortion of the pupil, accidentally produced by the belladonna, is reproduced, but in a permanent manner, by the cure of the iritis. Indeed, when the circular coarctation ceases on the disappearance of the disease, the pupil has a tendency to reume its natural shape; but if, during its contraction, adhesions form, and the unadherent portions only should become dilated, a permanent distortion then results.

As to the condylomata, according to some of the best ophthalmologists, they are but abscesses which occur more frequently in syphilitic than in other forms of iritis. We should therefore take into consideration the circumstances of their existence, especially if they co-exist with a syphilitic cutaneous eruption, as they will then be of more value in establishing our diagnosis.

Mackenzie alludes to a rusty color of the iris near its pupillary margin: a phenomenon, he observes, which is sure to be met with in syphilitic iritis. But M. Desmarres has seen this color in cases of iritis, without any special complication.

* Vid. in my *Pathologie externe* the different forms and degrees of Iritis, t. iii. p. 18, et suiv, 3d ed.

The progress and the character of the pains in syphilitic iritis deserve the greatest attention. Its progress is slower and less acute than that of traumatic iritis, which very frequently terminates in the rapid and complete obliteration of the pupil. The cause of traumatic iritis being entirely local, its effects seem to be limited to the eye affected; nothing, on the contrary, is more common than to see the other eye attacked in syphilitic iritis, and scarcely does the inflammation subside before it reappears, and so it proceeds, until several relapses have occurred. It is frequently the case, that false membranes are not formed until after several attacks of inflammation in the same iris, and they rarely produce an obliteration of the pupil, even when the disease is abandoned to itself. Disorganizations of the eye, and staphylomas, very seldom result from this specific iritis.

Pain in syphilitic iritis evidently occurs in paroxysms; these paroxysms are nocturnal, and, if pain exists during the day, there is always an exacerbation at night. It seldom occurs before eleven o'clock at night, and most generally at midnight, or at one o'clock in the morning. These pains are seated not only in the globe of the eye and orbit, but the corresponding side of the head; sometimes it extends towards the occiput. I am perfectly aware that other forms of iritis are attended with nocturnal pains—as, for example, the rheumatic, and even simple iritis; but I believe that this phenomenon is much more decided in syphilitic iritis. I attach much more importance to it than to condyloma, for these I have rarely observed, whilst the nocturnal pains have never been absent in cases of iritis where the disease has been at all severe. I should add, that the sulphate of quinine exerts a powerful influence over these pains; the hour of the accession of the paroxysms may, therefore, be changed, and finally they may be entirely removed by this potent agent.

None of the anatomical and physiological characters of iritis, taken separately, can be regarded as proof of its syphilitic nature. But, united, they possess a real value in forming a diagnosis, and this is especially true of those relating to its progress and the nature of the pains. First of all, the skin should be examined, if we would establish a sure diagnosis. I have already attempted to show the intimate connection existing between the syphilitic eruptions and iritis. It is such, that I consider the existence of syphilitic iritis impossible without the cutaneous eruption. Indeed, we shall find, almost invariably, some of these eruptions, or traces of them, and if not yet developed, it soon will be, before the iritis can have made much progress. In cases where the skin appears to be perfectly sound, we shall probably find on the mucous membranes in the buccal cavity, the anus and genital organs, lesions analogous to the syphilitic eruptions. Certainty of diagnosis, therefore, is established by taking into consideration circumstances unconnected with the symptomatology of iritis. But this is no reason why we should attach but slight importance to the elements which the symptomatology may furnish, for they may lead us to

an examination of the cutaneous surface, which might otherwise have been neglected.

I shall not here attempt to establish the varieties of syphilitic iritis. I have already stated that M. Ricord has assigned a form of iritis to each variety of the eruption. He recognizes an erythematous, a papular, and a pustular iritis. The mildest form should therefore correspond to the milder forms of the eruption, and *vice versâ*. I will only remark, that I have observed very slight and perfectly erythematous forms of iritis, with the graver forms of the cutaneous eruption. Thus the subject of the squamous eruption represented in plate 5, fig. 3, was affected with the mildest form of iritis, which was cured in eight days, and yet the eruption on this patient was very obstinate; the testicles became affected, his constitution deteriorated, and finally the constitutional infection was very complete.

Prognosis.—The gravity of the prognosis does not depend upon that of the syphilitic iritis itself, for, like the inflammation of the iris, it is perhaps one of the least compromising as regards vision. One circumstance which should render the prognosis very guarded, is the evident tendency of this disease to return. But the danger arises principally from the changes produced in the system, by the establishment of the syphilitic diathesis. Indeed, the iritis almost always supervening on constitutional syphilis, and after other manifestations of the disease, the patient is generally debilitated, and consequently intolerant of antiphlogistic and other debilitating remedies which form the principal part in the therapeutics of iritis.

Treatment.—Blood-letting is frequently indicated. Monteath insists upon the absolute necessity of this measure, especially in particular cases; he opposed his experience to those who place all their confidence in the use of mercury, to the exclusion of all other means, such as blood-letting, blisters, &c. This practitioner has seen, indeed, syphilitic iritis running rapidly into a dangerous hypopion, notwithstanding mercury had produced its complete effect, and yet its progress was at once arrested by repeated venesection in the arm, and the application of a blister to the nape of the neck. Mackenzie, who quotes and coincides with Monteath, states that he has been obliged several times to repeat venesection in the arm, besides resorting to the application of leeches, before he could affect the disease so as to derive advantages from the use of mercury.*

Unfortunately, syphilitic iritis often occurs in subjects whose constitutions, greatly debilitated, will not tolerate the abstraction of blood. Applications are frequently made to parts adjacent to the orbit, and to the eyelids, for the purpose of mitigating the pains, and preventing contraction and obliteration of the pupil, and they are either of an antiphlogistic character, or have a tendency to overcome the diathesis. Opiated frictions are commonly used to relieve the nocturnal pains; they should be applied about

* *Maladies des yeux*, p. 378, French Translation.

an hour before the expected attack. The eye may afterwards be covered with a folded compress which has been previously warmed before a fire. Whenever the paroxysms threaten to return, and this generally occurs about midnight, these frictions with opium should be renewed. Opiated mercurial ointment has also been employed, or the tincture of tobacco, according to the circumstances of the case and the judgment of the practitioner. The extract of belladonna, in the form of an ointment, is much used according to the following formula:

℞. Ext. Belladon. grs. xv.
Axung. ʒ i.

An application of a mixture of one part of extract of belladonna and one of mercurial ointment, is also employed; but precautions should be taken when belladonna is used in large quantities. It is proper here to allude to a phenomenon which has often been observed, and which is noticed by M. Velpeau. The extract of belladonna is generally employed for the purpose of preventing the contraction of the pupil and promoting the laceration of the false membranes which may have been developed in its vicinity. But it has been remarked, that in cases of intense iritis, the pupil does not dilate under the influence of the belladonna; it was only after the inflammation had subsided, and the congestion diminished, that dilatation was produced, and the laceration and separation of the very thin grayish newly-formed adhesions were effected. This shows the necessity of resorting to antiphlogistics before we use the belladonna. Every evening the belladonna should be freely rubbed over the eyebrows and on the eyelids. After the cessation of the acute symptoms, we may drop several times in a day a filtered aqueous solution of this substance on the conjunctiva. The medicine should be used regularly for a month at least when the pupil has not completely regained its natural mobility.

Mercury, however, is the best of all means. It is on this medicine, says Mackenzie, that we should chiefly rely to arrest the progress of syphilitic inflammation of the iris, and to remove the morbid changes which may be produced in this membrane and in the pupil. It should not be administered in small doses as an alterative, but the system must be fully impregnated and the mouth evidently affected. In many cases, it is only after a copious salivation is established, that any beneficial effect is observed from its use.

I employ frictions twice in the day on the eyelids and the eyebrows, with a pommade composed of two-thirds of Neapolitan ointment, and one-third of the extract of belladonna; afterwards I apply the Neapolitan ointment alone under the angles of the maxillary bones. In addition to the above, I administer internally two pills of the proto-iodide of mercury, daily. The mouth soon becomes affected, even severely, producing an abundant discharge of saliva, and a rapid resolution of the iritis. I know of no treatment more rapid and effectual.

Mackenzie alludes to a case where the medicine was thrown aside by the family physician; having been resumed, it produced but little benefit; the patient, finally, having taken ten grains of calomel and five of opium, daily, for several successive days, the mouth became suddenly affected, and the iritis disappeared as if by magic. This was a case of genuine syphilitic iritis, the patient's body being covered with a copper-colored eruption.

Mackenzie strongly recommends the combination of calomel and opium. A pill composed of one and a half grains of the former, and from one-third of a grain to one or one and one-third grains of the latter, may be given morning, noon, and evening, for some time, until the gums become decidedly affected; afterwards two pills a day may be continued for awhile, and when the salivation is of longer standing, we may diminish the quantity to one a day, to be taken in the evening. This combination is adapted to the severer cases, and when we wish to speedily arrest the progress of the malady, to prevent the effusion of lymph in the pupil, and to produce its absorption when already deposited. In the milder forms, we may rest satisfied in giving, to begin with, one pill morning and evening.

Mercury, especially the proto-iodide, should be administered for a long time, not only that the iritis may be checked, and its consequences removed, but for the purpose of curing the constitutional infection, as we cannot infer the cure of the syphilis from the cessation of the iritis, and we should remember that the general disease often appears to be cured, though much still remains to be done, particularly with mercury, in order that the eye may be thoroughly cured of the iritis and its consecutive effects.

I come now to speak of a means which has been highly praised, viz., turpentine. Carmichael of Dublin has reported cases in his memoir, presenting incontestable proof that this medicine has sometimes cured a form of iritis regarded as syphilitic. After the effusion of lymph in the pupil, and the formation of condyloma on the surface of the iris, he has succeeded in restoring these parts to their natural state. Carmichael was led to administer turpentine in iritis from the known influence of this remedy in cases of peritonitis, and the analogy existing between the morbid products in the two diseases, since in both a serous membrane is the part affected, and in both adhesions are produced between surfaces destined to be separated. This medicine, which, moreover, I have never administered, may be of service in some cases in which, from various circumstances, mercury cannot be employed. The oil of turpentine is given in drachm doses three times in a day. Its disagreeable taste, and the nausea which it produces, may be avoided by taking it in the form of an emulsion. If strangury supervene, the medicine should be for awhile suspended, and an infusion of flax-seed or camphorated julep be given. To prevent burning sensations in the stomach, we may add from four to five grains of camphor to eight ounces of the emulsion, containing one ounce of the turpentine. Conjointly with all these means, and even with the opiated frictions already mentioned, we should ad-

minister the sulphate of quinine, in cases where the nocturnal pains are severe. A pill containing one and a half grains of the quinine may be given when the patient retires, and another one hour before the expected paroxysm.

SECTION V.

DISEASES OF THE TESTICLE.

In the first part of this work I have described an affection of the testicles peculiar to the *so-called primitive venereal diseases;* this affection is orchitis, a lesion which is almost always of an acute nature. The disease now under consideration follows other syphilitic manifestations; it is one of the most remarkable forms of consecutive syphilis; it is the *syphilitic sarcocele* or the *venereal testicle*, a malady essentially chronic.

SYPHILITIC SARCOCELE, OR VENEREAL TESTICLE.

This chronic engorgement of which Astruc had a faint glimmer, and which Benjamin Bell seems to have in view, was but imperfectly known before the investigations of Dupuytren and Sir Astley Cooper. It is to modern writers that we must refer for the history of this affection, and several obscure points yet remain to be elucidated.

[Among those who have most contributed to promote our knowledge on this subject, by pathological evidence, the names of Cusack of Dublin, and Dr. John Watson of New York, deserve a conspicuous place. The paper of Mr. Cusack in the 8th vol. of the *Dublin Jour. of Med. Science*, Nov. 1835, though brief, is valuable, inasmuch as his remarks are based on the evidence afforded by eight pathological specimens. It is strange that neither Sir Astley Cooper nor Mr. Curling never had an opportunity of dissecting a syphilitic testicle (*Curling on Testis*, Am. Ed., p. 348.) Sir Benjamin Brodie refers to a case in which he examined a testicle thus affected, but the morbid appearances observed by him did not differ from those seen in chronic inflammation. (*Lond. Med. Gazette*, vol. xiii., p. 379.) The preparations presented to the Surgical Society of Ireland by M. Cusack, exhibited the changes produced by the disease "in all its stages of progress, from a small circumscribed tubercle in an otherwise sound testis, to the contracted, indurated, and completely disorganized gland," which changes were analogous to the products of scrofulous disease. The several examinations made by Dr. Watson led him to conclude that the primary seat of the affection is in the fibrous envelope forming the proper capsule of the testis, which occasionally becomes enormously thickened, whilst the proper tissue of the testis remains healthy.

The tubule seminiferi, with their continuous vessels of the epididymis were atrophied, pale, and immersed in serous effusion. In one case, there was a deposit of a large yellow mass, irregular in shape, broadest in front, and apparently connected with the fibrous envelope of the testicle, and extending backwards in the direction of the corpus highmorianune. This mass, by its pressure, produced atrophy of the tubuli seminiferi. (*Watson on Syphilis, New York Journ. of Med. & Collat. Sciences*, Nov., 1845.—G. C. B.]

As I have already stated, syphilitic sarcocele is one of the most remarkable forms of consecutive syphilis; it is also that affection which at its commencement perhaps furnishes the strongest argument against the systematic arrangement of the syphilitic accidents into three divisions. In fact, the same tumor may be a secondary, a successive, and a tertiary accident; for we see syphilitic sarcocele developed during the existence of chancre, and the eruption which is earliest manifested, or even when not preceded by syphilitic cutaneous eruption, and again it appears only in connection with the more profound and tardy forms of the eruption; finally, it may not occur until the last stage of syphilis, with the exostosis; then it is tertiary. I had in my wards for a long time three patients affected with this disease, and in whom existed these three connections with other accidents.

Symptoms.—If we would remove the obscurities surrounding the history of venereal engorgements of the testicle, it is necessary to establish two varieties.

1*st Variety.*—A blennorrhagia has existed, and may still exist, but it is rarely alone, the patient most frequently having been affected with chancres. The tumor almost always commences in the epididymis; at a period, generally advanced, of the disease, we may detect an effusion of greater or less quantity of serum, in the tunica vaginalis. Sometimes the testicle is affected simultaneously with the epididymis; it may constitute the largest portion of the tumor, which is generally of considerable size; it is ordinarily larger, more unequal and painful than in the second variety. It is in this variety especially, that the tumor is the seat of lancinating pains like those of cancer. When the disease is of long standing, we find both sides affected; then when we imagine that we are treating an ordinary orchitis, which shifts from one testicle to another, as is of frequent occurrence, we are frequently mistaken, for whilst orchitis ordinarily disappears on one side when the other testicle becomes affected, we here observe the tumor on one side increasing whilst that of the opposite side does not diminish. This is the engorgement of the testicle which M. de Castelneau regards as a chronic orchitis, and which other writers on syphilis consider to be a syphilitic testicle, and which, in my opinion, is both. Perhaps it would be more proper for me to say, that it is an orchitis complicated with syphilis, a circumstance which gives it a decidedly chronic character. Thus, in this first variety, syphilis invades a testicle already diseased, already inflamed; it attacks a testicle affected with orchitis.

2*d Variety.*—This is observed in patients who have never been

affected with blennorrhagia, who even have never had any disease of the genital organs, since I have seen a case of syphilitic sarcocele in a patient where the only antecedent disease had been a chancre on the lip. Generally, there has been a primitive ulceration on the penis, and this has been followed by a syphilitic eruption. In the majority of cases, there are no premonitory symptoms and it is only by accident that the patient discovers that there has been any alteration in his genital organs, or perhaps he may feel a sensation of weight, and inconvenience, and of dragging. It is rare that a dull pain in the loins, occurring chiefly during the night, precedes or accompanies this variety of syphilitic engorgement. The tumor is generally smaller than that in the first variety. Sometimes the epididymis is not involved in this augmentation of volume; it seems perfectly atrophied by the compression which it suffers from the abnormally-developed testicle. The gland becomes gradually indurated in patches, in zones; these multiply and finally become united, the testicle only, enlarged without being sensibly altered in form, is of remarkable hardness. Both sides are affected more frequently than is imagined, but generally one is larger than the other, and this alone arrests the attention of the observer. If but one testicle is really affected at first, the other soon becomes involved. According to M. Ricord, the parenchyma of the testicle, after having suffered this syphilitic attack, becomes transformed into fibrous, cartilaginous, or osseous tissue; it may undergo even a malignant degeneration. Sometimes the tumor ulcerates; according to the same writer, this would then constitute a gummy tumor, which should be opened independently of the testicle, it being seated in the cellular tissue of the scrotum. Atrophy may be one of the consequences of this affection of the testicle, but it is not constant. I have seen, in more than one instance, both testicles which had been completely affected with this disease, restored to their normal state and afterwards perfectly fulfil their functions. I have seen it followed even by hypertrophy of the testicle; a case came under my observation, where the testicle on one side had been removed, and the other was affected with the disease under consideration, and yet this patient after he was cured, indulged to excess in coition. I shall refer to this fact in another place.

This second variety, which affects especially the seminal gland, may occur even where no antecedent chancre has been observed; it may result from syphilitic blennorrhagia. It is to cases of this kind that most of the obscurity connected with the history of the disease in question is to be attributed; for the advocates of chronic orchitis, who almost always reject this second variety, attach great importance to the antecedent blennorrhagia in establishing this same chronic orchitis.

Generally, the tumors on both sides are not painful, when they belong to the first or second variety. If pressure be made somewhat firmly, it produces the same amount of pain that it would if made on a sound testicle. This pressure may be productive of no sensation whatever. When pain does exist, if on one side, it is

rather towards the inguinal region, and in the majority of cases, it is then caused by the weight of the tumor, when the latter is of large size.

As I have already stated, I am now treating of chronic affections. Their progress is slow, and they may continue for several years. If we observe a certain tendency to assume an acute character, it is in the first variety, and affects the epididymis. In the great majority of cases, there is a decided alteration in the functions of the testicles. Sexual desire is diminished, and in some instances completely destroyed; erections are then less frequent, and sexual intercourse, less sought after at first, at length becomes impossible. The secretion of semen is lessened, and is proved by the smaller number of animalculæ which is in all cases observed. These lesions in function become much more decided when the disease involves more particularly the parenchyma of the testicles, and when both are involved. The second variety in this respect, is more grave than the first. I shall return to this subject when I come to speak of the prognosis of the disease.

Diagnosis.—The diagnosis may be greatly simplified by observing the general rule mentioned in a memoir which I read to the Academy of Medicine. I have stated that when there is a chronic engorgement of both testicles, the affection is necessarily benign; it cannot belong to any of the forms of cancer, nor to the category of tumors caused by tubercles which are found at the same time in the internal organs. Syphilitic sarcocele, therefore, can be confounded only with the chronic engorgement of the testicles, which is also regarded as a tubercular affection, but which is of a benign character as the viscera are sound. It remains, then, to distinguish syphilitic sarcocele from this chronic engorgement, or, if it be preferred, from these benign tubercular tumors. Here the antecedents and the concomitant symptoms afford us great assistance. The tumor, besides, in the second variety, is less irregular than in the strumous affection, and the induration involves the testicle itself, whilst in the strumous disease the testicle retains its normal elasticity. The first variety, that which was first described, may more readily be confounded with the engorgement in question, and so much the more easily as among the antecedents of both tumors a blennorrhagia may be found. But the strumous tumor is much more irregular; there are portions of it which frequently become softened, and suppurate; it is rare that the patient, at some period of the disease, does not experience pain, and pressure, even when slight, produces it. Syphilitic sarcocele, on the contrary, may pass through all its stages, without ever being the seat of the least pain, and, in some instances, even pretty strong pressure does not excite it.

Treatment may throw some light on the diagnosis; the iodide of potassium, indeed, in large doses, produces a prompt and decided effect on the syphilitic tumor, while the same medicine, administered in strumous cases, is long in exerting its influence, and its action is felt in the tumor only after the whole system has been thoroughly modified by this agent. True, the prompt and

manifest action of which I have spoken is produced only in the first variety, and it is rare to observe these effects produced when the iodide is employed in the other forms of syphilitic sarcocele. But this variety is very favorably influenced by mercury, used both externally and internally, while the effects of this agent are injurious in the strumous affection.

Prognosis.—I have already indicated my opinion as to the prognosis in syphilitic sarcocele, when I classed it among the benign tumors of the scrotum. The prognosis is therefore favorable, especially since the iodide of potassium has been introduced into the therapeutics of certain forms of syphilis. There is no diversity of opinion on this point. The patient, then, has nothing to fear in general; but what effect has the disease on the functions of the organs? This is a serious question, which I have attempted to discuss in a paper read before the Surgical Society of Paris.

A testicle affected with what is called syphilitic sarcocele doubtless suffers profound modifications in its structure. I have already stated, that the organ may become of a fibrous or a cartilaginous nature, or its parenchyma may become the seat of calcareous deposits, in which case it becomes atrophied. Nutrition in the substance of the organ is impaired, the organ itself is diminished in size, and after the cure of this kind of sarcocele, it remains more feeble and of smaller size. Atrophy of the testicles, therefore, is a condition so frequently produced by syphilitic sarcocele, that we are authorized in assigning it a place among the general characters of the disease. But I believe that those who regard atrophy as an inevitable termination of syphilitic sarcocele, entertain an opinion not warranted by facts, or, more properly speaking, by well-authenticated facts. The consequences of atrophy of the testicles, as regards their functions, may be imagined, since if it exist to any great extent, if it involve the parenchyma of both organs, it is equivalent to castration. Unfortunately such a condition sometimes happens. Thus, I was consulted by one of my *confréres*, who had watched the wasting of his testicles under the influence of syphilitic disease; a portion of the epididymis only remained on either side, and these remnants of the organs were exceedingly sensitive; impotence in this case was complete. This was an example of atrophy with its most serious consequences. The most common result of the disease is to diminish the size of the testicle in its *ensemble* only, and to render it irregular and of unequal consistence.

The extent to which virility is impaired, does not appear to be always in proportion to that of the destruction in the organ produced by the disease: indeed, we meet with patients no longer capable of an erection, or in whom the seminal discharge is very diluted, and small in quantity, and yet who have lost but a small portion of the parenchyma of the testicle. These differences depend upon the age of the patient, the use or abuse he has made of his virile powers, and the state of his mind. In connection with the latter point, melancholy cases are sometimes observed; they occur in that class of society capable of comprehending the nature

of atrophy of the testicles and its effects on virility. These unfortunate individuals have learned the nature of indurated chancre and its consequences, of syphilitic sarcocele and its results: they remain a long time under the influence of disease; they imagine an impotence with which they are often not affected; they are afraid of marriage, regarding themselves as ruined men, and they remain in a state of celibacy the most melancholy and complete. If certain considerations, family or self-interest, lead them to contract marriage, at the moment of attempting the conjugal rite, their courage fails them, and they sink into the deepest despair. I knew a person placed in the above circumstances, and who afterwards became a father, after having been persuaded that even when both testicles are diseased, provided the patient be placed under proper treatment, virility may be preserved. This fact of itself is calculated to impress upon our minds the importance of the subject now under consideration.

[These remarks of our author will doubtless recall those made in another place on *Syphilophobia*.—G. C. B.]

For my own part, I believe, not only that atrophy followed by impotence are not the inevitable consequences, even when what we call syphilitic sarcocele is cured, but I am acquainted with facts which led me to think that, in certain cases, the testicle thus affected may, after a well-directed treatment and cure, preserve its vigor, and be completely restored to its normal anatomical and physiological state. A rare exception is where the same syphilitic influence, exercised on the same individual, produces completely opposite effects in each testicle; one will become atrophied, the other hypertrophied. I shall soon relate a case showing this double effect of the syphilitic action.

I have already published the details of one of the strongest cases to show that virility may survive a profound syphilitic affection of the testicle; this case is related in my work on *surgery*, and I shall repeat it when I come to the subject of the therapeutics of this disease. The patient was a soldier, from whom an army surgeon removed one testicle, supposing it to be affected with malignant disease; in investigating the previous history of the case I found that the patient had had symptoms of syphilis. I prescribed the iodide of potassium in what I call *sufficient* doses. The testicle soon returned to its normal state, with the exception that it remained somewhat larger than natural. I ask the attention of the reader here particularly to the last part of the report, which thus concludes: "*The patient is constantly inclined to sexual indulgence.*" I am convinced of the truth of this by the fact that I have been called upon to treat this soldier twice for blennorrhagia since he left the hospital. Here we have a patient with only one testicle, and that affected with what is called sarcocele; the previous history of the case, the characters of the tumor, the good effects of the iodide of potassium, all go to prove the fact; yet this testicle, after the disease is removed, was not only not atrophied, but seems to have been hypertrophied; his virility was not destroyed, for he

indulged in sexual excesses, the penalty of which was repeated attacks of blennorrhagia!

In the month of August, 1847, there was in my service at the *Hôpital du Midi*, a carman, who presented an analogous case to that just described. This patient had never lost a testicle, but one was not developed; it was the right testicle, and was situated near the external opening of the inguinal canal, where the only trace of it to be found was the epididymis, which was scarcely the size of a common bean. This carman left my service cured; he afterwards contracted a chancre at a house of prostitution, communicated it to his wife, who became pregnant and gave birth to a child, which died shortly after its birth, covered with a syphilitic eruption, similar to that which I observed on its unfortunate mother. Here, again, was a subject with only one testicle, and that evidently syphilitic, and yet his virility was not affected, since it was manifested both in lawful and illicit intercourse, and by the birth of a child bearing the marks of the paternal disease.

The following case would seem to prove that a syphilitic affection involving both testicles, may produce atrophy in one alone. M. Ricord asserts that this atrophy is consective to an actual disease of the testicle, of the existence of which we may be ignorant, since it does not augment the volume of the organ. For my own part, I consider it of but little consequence whether the atrophy is primitive or consecutive; what I maintain is, that there may be atrophy of the testicle on one side, and hypertrophy of that on the other.

On the 19th July, 1845, there was admitted into my service a man named B., æt. 50, a road-laborer, and of good constitution. Twenty years before he contracted a chancre, which was followed by a suppurating bubo in the left groin. At the end of ten days the chancre became cicatrized, but the patient was confined to his bed awaiting the cure of his bubo. He took pills, but does not know whether they contained mercury; he never had an eruption on his skin, nor sore throat. Six years since he suffered, without any apparent cause, pains in his head, neck, and extremities, which lasted only fifteen days. Three months since he contracted a new chancre on the anterior part of the reflection of the prepuce; the only treatment was cauterization, and it cicatrized in the course of fifteen days. This patient never had a blennorrhagia. Some two months before the appearance of the last chancre, the left testicle began to enlarge, and this enlargement was unattended with pain. It is only during the last month that the patient has experienced shooting pains, which are more frequent during the night than the day. The left testicle at present is of the size of a large hen's egg; it is hard, heavy, of pyriform shape, and presents slight inequalities. The epididymis cannot be felt, but appears to be confounded with the testicle. The spermatic cord is somewhat larger than natural, and the veins of the same side are also unusually developed. Pressure produces but little pain. A month and a half since a small tumor appeared on the external and superior part of the left thigh, which suppurated. The wound was not completely cicatrized until about eight days since; a very large reddish cicatrix

remained, analogous to those left by cutaneous tubercles. The right testicle is atrophied, being reduced to half its size. This diminution in size was not preceded by any tumefaction, and occurred about two months after the left began to enlarge, and at a time when discutient plasters had been applied to the latter, leading the patient to suppose that the atrophy of the right testicle had been produced by the plaster.

July 12th. The iodide of potassium was administered to the extent of half a drachm daily. Eight days afterwards the pains had ceased, and there was a marked diminution in the size of the testicle.

28th. The left testicle, which was the largest, is reduced to nearly half the size it presented on the patient's admission. Indurated nuclei are felt much more distinctly when the testicle is made to glide beneath the skin under the fingers; the consistence is less. The epididymis is readily distinguished from the rest of the gland, and the spermatic cord has regained its normal size. There is no longer pain even on pretty firm pressure. The normal sensibility seems to be diminished. For some days past the patient has been troubled with dimness of vision. The vessels radiating from the sclerotic are slightly injected; there is photophobia, with lachrymation. The patient also complains of buzzing in his left ear, but this has existed for several years.

Aug. 8th. Vision is now perfect, and the eyes have resumed their natural appearance. The buzzing in the ear continues. The indurated nuclei in the left testicle are less numerous and painful. The consistence still diminishing.

22d. The left testicle has regained its normal shape. It still remains larger than natural. The right is always small—that is, it is reduced one-half. I saw this patient again one month after his cure; he came to consult me in regard to a blennorrhagia which he had contracted.

Here, then, we have three cases establishing the fact that both the testicle and its functions may be preserved in their integrity after the termination and cure of a syphilitic sarcocele. They justify me in placing hypertrophy of the testicles in the same category. I will not conceal the objections which may be urged against my conclusions, objections drawn from the cases themselves which I have quoted. In the first place, it may be said, that hypertrophy of one testicle in the absence or imperfect development of the other, is a fact in the organo-genesis well known; that the hypertrophy preceded the syphilitic infection. Syphilis, therefore, did not give rise to it; it resulted in obedience to that law of compensation, by which the materials destined for the nourishment of an absent or imperfectly-developed organ, are carried to its fellow organ, which thus receives an unaccustomed supply. It may be objected, perhaps, that in the cases above mentioned, syphilis has found the testicles hypertrophied, and that if after its cure, the testicles remain of their natural, or of an unnatural size, if they still retain their functions, it is no proof that these organs have not suffered a certain degree of atrophy, for an organ which

is equal to one and a half may very well suffer a substraction, and remain still equal, if not a little more larger than the other. The case of the carman furnishes the strongest argument in favor of this view of the subject; he was born with but one perfectly-developed testicle, whilst the situation of the other was indicated only by a portion of the epididymis. There may therefore be some ground for believing the perfectly-developed testicle, in this case, had become considerably enlarged before it became diseased. When attacked by syphilis it became reduced to less than its natural size: the hypertrophied organ here became atrophied, and the hypertrophy was at the expense of the cure. These arguments, to which I cannot refuse a certain value, do not destroy the fact of one testicle retaining its natural size, with a volume even more than natural, preserving its functions, and this, too, after it has suffered from the disease called syphilitic sarcocele. I do not know precisely what was the condition of the left testicle in the carman before it became attacked by syphilis; what I affirm is, that, after the cure, it was found of larger size than the same organ in another subject of the age and strength of that patient. I will also state, that this carman, who had begotten no child before his disease, did so after his cure.

The same objections, perhaps, may be advanced against the case of the soldier in whom one testicle had been extirpated, and who, after being cured of syphilitic sarcocele in the other, preserved the latter in an hypertrophied and very active state, for there was an interval of two years between the castration of the one, and the syphilitic attack in the other. During this period, it may be said, the testicle which was left had the benefit of the nutritive materials destined for the other as well as for itself, and may have thus become preternaturally developed: constituting an hypertrophy, which may have prevented the atrophy from producing its effects. To this I will reply, in the first place, that the two years' interval above mentioned, was too short a period for an organ to become so hypertrophied as to resist the atrophy produced by syphilis. Further, as the whole history of this soldier's disease, a history which may soon be read, proves to me that the amputated testicle was not cancerous, but syphilitic; and, as it was the same venereal disease with which the first was affected that invaded the latter, I submit whether a subject, completely infected with syphilis, under the influence of a principle the tendency of which is to produce atrophy of the testicle, could, under such circumstances, have one of these organs hypertrophied. I believe, further, that the alterations of tissue constituting the tumor, called syphilitic testicle, or syphilitic sarcocele, may vary, and that the mode of reparation is not always identical; in proof of this, I will offer the case which I have fully related. It shows, indeed, that under the same syphilitic influence, one testicle becomes atrophied without becoming tumefied, while the other tumefies, actually forming a tumor, and remains, to a certain extent, hypertrophied. These facts and these inferences are, in my opinion, of a nature to merit the attention of practitioners, for they relate to an important question in pathologi-

cal anatomy, and to the question of sterility in the male—questions of very serious importance, in many points of view.

Treatment.—The treatment is the same as in confirmed constitutional syphilis, modified, however, according to the variety of the sarcocele and the other circumstances already indicated. We should remember that syphilitic sarcocele does not always occur at the same period of syphilis. I have asserted, at the commencement of this article, that the tumor may appear shortly after the first manifestation of syphilis, simultaneously with a premature eruption on the skin, or without this eruption, that it has been observed during the period of transition, and that, in fine, it may occur among the latest symptoms, such as periostosis and the exostosis. The practitioner should take these circumstances into consideration. The sarcocele which appears before this profound alteration of the organism, which contra-indicates all depletory treatment, may be advantageously affected by mercury. It was this variety of sarcocele, which I will call premature, that was cured with mercury alone, by Dupuytren, Boyer and other practitioners, who, before they decided to perform castration, subjected to a mercurial treatment patients affected with chronic enlargement of the testicles, which assumed certain of the characters of cancer. Thus, more recently, with the pills of the proto-iodide of mercury, I have removed a double syphilitic sarcocele, which had preceded the squamous eruption. Mercury, therefore, and even mercury alone, may radically cure certain syphilitic sarcoceles, and I believe that it is well to commence with it, when we have a concomitant superficial eruption, and the patient still retains his strength, and his constitution is not profoundly altered. It is, in my opinion, the means for preventing relapses. But it is evident that certain sarcoceles, especially those of the second variety, cannot be affected by mercury, no matter how it may be administered. This remedy, therefore, may have its dangers, and it is principally when the disease is late in its development, when it occurs in the last stages of syphilis, when the syphilitic cachexia is already established. These are the sarcoceles which were formerly removed by castration; they were regarded as of a cancerous nature, because they resisted the influence of mercury. This period is not very remote from our own, and I have seen, quite recently, some of the great masters whom I have mentioned remove testicles which might have been saved by the iodide of potassium.

[Dr. John Watson refers in his Essay to an instance where, in consultation, he opposed, but unsuccessfully, the operation of castration for syphilitic sarcocele!—G. C. B.]

This, therefore, is the remedy to be employed in severe cases, when the constitution has become compromised; in the second variety, then, it will produce very prompt, and at first, very decided effects. Its employment even need not be confined to the latter variety; as a general rule, it should, be associated with mercury in the treatment of the first variety. The following is a report of the case to which I have alluded; it is calculated to make

the surgeon reflect in similar cases, and to cause the surgeon who performed the operation to regret the deed.

Great enlargement of the left testicle. Ablation of the organ by an army surgeon who regarded the tumor as a hydro-sarcocele. Similar enlargement of the right testicle. Cure by the iodide of potassium.—B., æt. 29, gunsmith, occupying No. 24, Ward 10, admitted 11th of March. Not very robust, and of a scrofulous aspect. He states that from his childhood he has never been ill. His parents are healthy, and are very vigorous. On his neck and face, however, are cicatrices which have resulted from scrofulous ulcerations. Six years since, he had a blennorrhagia, which lasted eighteen months; this was never painful, and was cured spontaneously. Six months afterwards, long after he had indulged in sexual intercourse, ulcerations appeared on the prepuce and glans. The patient submitted to a mercurial treatment. After this, he had an eruption on the skin, which the physician did not regard as syphilitic, according to the patient's statement, and there was an enlargement in the left axilla, without any abrasion or wound of the corresponding extremity; perhaps it was a scrofulous bubo, and it was treated by maturatives and an incision. The patient states that there was a syphilitic ulceration in his mouth, which his physician repeatedly touched with the nitrate of silver, and which healed several times only to break out again. At length, the left testicle began to enlarge (the patient being at this time in service); in the course of four months it acquired an enormous volume; hard at the commencement, it became softer and softer; more or less frequent shooting pains were felt in the tumor, extending even to the kidneys. For four months the patient remained in military hospital. Finally, in April 1841, the tumor was removed by operation. The wound, at the end of six weeks, had completely cicatrized. The man resumed his occupation as gunsmith.

Two years afterwards, the right testicle became enlarged. In the month of August, 1843, this enlargement had acquired the volume of the two fists. It was hard, particularly at its inferior part; it was the seat of severe lancinating pains, which deprived the patient of all repose. His physician prescribed the repeated application of a large number of leeches to the tumor, frictions with mercurial ointment, and the plaster of Vigo. Six weeks afterwards there was a great improvement; but the patient led an irregular life, and was addicted to excesses. Although deprived of one testicle, and the other was diseased, he had strong sexual desires. After his indulgences, his pains returned with still greater severity. He then resolved to place himself under my care, and he was admitted into the *Hôpital du Midi*. The tumor was much larger than the fist; it was hard at its posterior and lateral parts; somewhat soft anteriorly, and there was a sense of fluctuation for the extent of about one inch; its shape was oval, its upper extremity the largest, and it had much the appearance of the swelling in hydrocele; but it was much heavier than the latter. As I have already stated, this tumor was the seat of severe lancinating pains. The particular hardness of this tumor, the nature of the pains, the

circumstance of the ablation of the other testicle, seemed to show that it was a true sarcocele, a scirrhous or encephaloid tumor which might lead to a fatal termination. But having carefully learned the history of the disease, on his admission, I placed him under the influence of the iodide of potassium; he had taken only about two drachms before the pains had nearly ceased. At present, April 15th, 1844, the tumor is reduced one half in size, and the pain has completely subsided.

The part of the tumor presenting an obscure fluctuation has not enlarged, but there is still a sensation of a fluid of this consistence, as if it might be the product of *ramollisement*. On the 2d of May, 1844, the indurated portion had diminished in extent, fluctuation was more evident, and the whole tumor was less than half its original size; on the 19th of May, it was scarcely double the volume of an ordinary testicle. The administration of the iodide of potassium was suspended. Frictions were made on the tumor with an ointment of the iodide of lead. Finally, the testicle resumed its normal state, and the patient left the hospital on the 15th of June. He is always strongly inclined to sexual indulgence.

We here see a tumor presenting many of the characters of encephaloid disease; an obscure fluctuation, lancinating pains, debility, pallor of countenance, one testicle amputated, a testicle which was similarly affected, and yet the iodide of potassium in this case was triumphant! Did it cure a cancer, or was it a case of benign tumor, a syphilitic sarcocele? The latter appears to me the more rational hypothesis.

SECTION VI.

DISEASES OF THE CELLULAR TISSUE.

In describing the affections of the skin and mucous membranes, we have frequently alluded to a simultaneous lesion of the cellular tissue. Thus, the deep-seated syphilitic eruptions, the tardy lesions of the velum palati, of the pharynx and tongue, are attended with more or less congestion of the subjacent cellular tissue, and at the same time it is observed in the affections of the external and internal tegumentary coverings. It is the diffused syphilitic induration of the cellular tissue; it may occur conjointly with the lesions of the skin. In this case, the cellular tissue seems to become affected by the extension of the cutaneous lesion, or by that of the mucous membrane by which it is covered. At other times the cellular tissue becomes thickened, and indurated without any previous affection of the skin, which may then remain for a long time and forever, in a normal state.

Instead of this diffused or vaguely-circumscribed induration, we may observe partial engorgements, which gradually assume the form of a nut, tubercle or knot. They may be condylomata

and then they occur especially about the anus; or they have received the names of *gumma*, *nodes*, *gummy tumors*, and are found beneath the skin, the deep cellular tissue, and even in the substance of certain organs, and of muscles. This affection of the cellular tissue is observed when constitutional syphilis has deeply undermined the system. The most frequent seat of these tumors is on the external surface of the extremities, in the subcutaneous cellular tissue, where it is lamellar and dense; there they may for a long time preserve a certain degree of mobility and for a decided prominence; they have been seen of a pediculated shape.

These tumors may occur in the cellular tissue of the scrotum; they may then be confounded with syphilitic sarcocele, a mistake of no great importance, or they be confounded with genuine cancer, an error of much more serious consequence. They may also occur in the deep-seated cellular tissue, and even in that which unites, or separates the fibrous or the muscular system. Thus they frequently invade the tongue, which then appears as if covered with small hazel nuts. M. Ricord mentions a remarkable case of the kind. It is in such cases that it is especially liable to be confounded with cancer.

Generally, there are several of these tumors, but they are not all developed simultaneously. Months, and even years, may therefore be required to effect their cure, no matter what the treatment pursued. At first, they are small, but little sensitive, hard, adherent to the skin, but free and movable beneath. They are slowly developed, increase slowly, and are unattended with pain. Some little inconvenience in the part, or accident, leads to their discovery by the patient. They vary in size from that of a hazelnut to a walnut. For a long time hard, they finally yield to pressure, presenting a slight sense of fluctuation, which afterwards becomes quite evident. Then, if they are in the vicinity of the skin or the mucous membrane, their envelope becomes thin, of a violet reddish-brown color, and they burst, presenting perforations similar to those which follow the opening of an anthrax. A badly assimilated pus, a kind of gummy matter, of organic *debris,* issues by the openings which become enlarged: a deep ulceration forms; the gummy tumor appears to be evacuated, leaving a kind of cavern, bounded by a shell, or cyst, which must be destroyed and cast out, before complete reparation can occur. The cicatrix that follows is depressed, and irregular like that succeeding to a deep burn.

M. Ricord observes that the ulcerative destruction which succeeded to the tumors on the tongue, in the case before mentioned, "was horrible, and to eyes unaccustomed to such sights these ulcers might have appeared horrible cancers."*

We should remember, that all deep-seated syphilitic tumors are not formed by the cellular tissue, or at least by this tissue alone. Thus, in describing the tumors of the muscles, I shall soon speak of one formed by a particular degeneration of the muscular fibres

* *Traité des Maladies Vénériennes*, p. 660.

themselves. In complex cases, the tumor may be composed both of cellular tissue and the parenchyma of organs.

The affections of the cellular tissue, of whatever form, are necessarily grave, as they occur at a period of syphilitic infection characterized by a profound alteration of the organism. The gravity of the prognosis, besides, depends upon the seat of the gummy tumors. Thus, those situated beneath the skin on the extremities, are of a much less serious character than those which are developed in the substance of the tongue, or of the velum palati; for when they ulcerate, they may commit vast ravages, and compromise important functions.

The treatment must be adapted to the nature of the affection, and the period of syphilis in which it is observed. Mercury can seldom be administered with propriety in these cases, on account of the profound alteration of the organism coinciding with these tumors. The practitioner should therefore avoid this and all other hypothenisants, and trust to tonics, and such other means as may invigorate the system. At the head of these means, stands the iodide of potassium. If the subject tolerate it well, and it be administered in due season, we shall see these tumors rapidly disappear. Some have advised the application of blisters to these tumors, and that they should be opened, and even extirpated. It is evident that these proceedings cannot be resorted to except in certain cases, where the situation of the tumors renders them accessible to the means indicated. Cullerier treated these tumors by blisters dressed with the bi-chloride of mercury, as is recommended by M. Malapert in the treatment of buboes. The opening of these tumors is but a palliative remedy, and their extirpation should not be attempted except when general treatment has been exhausted, and a satisfactory trial given to the iodide of potassium. Should, however, we attempt to extirpate them, we should do it thoroughly, for the suppuration will be rendered very protracted if any portion of the cyst be left behind. Sometimes the opening of the tumor, whether spontaneous or made by the surgeon, is followed by a very active inflammation. We must then resort to topical emollient applications. In the majority of cases, dressings with charpie, steeped in a mixture of two-thirds water and one-third tincture of iodine, should be preferred. We may afterwards employ dressings with the *vigo cum mercurio*, which will here be found a very useful application.

SECTION VII.

AFFECTIONS OF THE MUSCLES, TENDONS, AND APONEUROSES.

These organs of locomotion frequently become affected in the last stages of syphilis, and yet, until recently, the study of these lesions has been almost entirely neglected. Astruc merely alludes

to this manifestation of syphilis; according to this writer, when the substance of the muscles becomes infiltrated with the virus, we have *ganglions*, and *hard tumors;* he speaks of rheumatic pains. Petit Radel properly characterises it "a *retraction* rebellious to treatment." M. Lagneau seems to have observed analogous cases, and he regards the *syphilitic contractions* as chronic inflammations of the muscles, arising from the syphilitic infection. MM. Ph. Boyer and Ricord have clearly described these contractions, especially those seated in the flexor muscles of the fore-arms; they place beyond doubt the syphilitic nature of this lesion, and its connection with the tertiary symptoms. I have more than once observed the contraction of the brachial biceps, and have seen a tumor seated in the rectus femoris. The particulars of this case I will soon relate. Finally, M. Bouisson has treated, *ex professo*, this question of the *syphilitic tumors of muscles and their appendages*, in a memoir published in the *Gazette Medicale* of Paris, 1846. I have availed myself of this memoir in the present article.

Causes.—The last effects of the diathesis are manifested by numerous local affections. It is the duty of the practitioner to discover the existence of this diathesis, and to assign to it its proper place in the etiology of these affections. Nothing is better established than its manifestations in the osseous and fibrous tissues, in what is called the tertiary form of syphilis, and these manifestations are generally produced by the influence of syphilis alone, without the intervention of any local or appreciable external cause. The syphilitic tumors of the muscles, and tendons, come under the same category; they become developed in the substance of these organs, independently of any particular exciting cause.

Symptoms and Pathological Anatomy.—The principal symptoms are, *pain*, *contraction* and *tumors.*

1st. *Pain.*—Pain is more especially observed when the syphilitic infection is inveterate, and in patients who have been exposed to the influences of cold and moisture; these predisposing causes are not essential. This accident has been described under the name of *syphilitic rheumatism.* The pain is felt along the course of the muscles, tendons, and the aponeurosis of attachment or envelop; it is of a character similar to that felt in *osteocopes*, but is less profound, and is exasperated by muscular contraction; it differs from ordinary rheumatic pain by its relation to accidents evidently syphilitic, and it yields to specific treatment.

2d. *Contraction.*—The muscular contraction is sometimes the result of *syphilitic* rheumatism, of which it is but a higher degree; at other times, it is slowly manifested, and coincides with a more or less advanced state of the disease. The muscles of the superior extremities, and more especially the flexors of the fore-arm, are most frequently affected with this contraction. M. Bouisson speaks of a syphilitic contraction of one of the motor muscles of the eye. According to this surgeon, if he were to name the seat of election of these contractions, it would be the sphincters.

"We know," he observes, "how common are permanent con-

tractions of the sphincter ani, in subjects affected with syphilitic eruptions in this vicinity, and with fissures of the anus. We also frequently observe active and painful contractions of the vagina, in women affected with ulcerations in the vicinity of its vulvar opening. Now, if in certain cases, these spasms are provoked by the presence of ulcerations, independently of any specific influence, we do not violate the laws of analogy, in assigning in other cases, contraction of the sphincter muscles, a place among the accidents of confirmed syphilis, and in regarding it as a veritable venereal contraction," (*loc. cit.*) I know not precisely whether M. Bouisson does depart from the laws of analogy, but judging from my own observations, he abuses them.

3d. *Tumors.*—Tumors developed in the muscular system and its appendages are deserving especial attention. I will first speak of the tumors of the appendages.

The *tendons* and *aponeuroses* are more frequently the seat of syphilitic tumors than the fleshy part of the muscles. The tendons, like the periosteum, notwithstanding their feeble vascularity, participate in the effects of confirmed syphilis, and are especially liable to become the seat of partial thickenings, or of small tumors called *nodes*, which are sometimes hard and filled, sometimes fluctuating. The pathological susceptibility of the aponeuroses, is here less marked, but different observations, and particularly those of Hunter, leave no doubt of the part which they take in this class of affections. It cannot, however, be denied that all the reports of these cases are brief and unsatisfactory, and that they merely indicate their existence without affording us full details; it is even probable that in many of the cases where tumors have formed in these tissues from the effects of syphilis, and which have fallen under the notice of different observers, their real nature and causes have not been suspected. M. Bouisson has furnished the details and facts, which, as far as possible, have rendered the study of these affections complete.

These tumors are sometimes solid, and appear to be produced by a circumscribed hypertrophy of the fibrous tissues of the tendons, with effusion of a serous and plastic fluid in their interspaces; they are accompanied with pain more or less acute, which is increased during the contraction of the muscle to which the tendon is attached. The cadaveric examination exhibits this tendon of its natural color, or presenting only slight traces of injection; but it is enlarged either by the thickening of its fibres, or by the addition of an albuminous and demi-solidified matter. If the affection be long protracted, if it does not terminate in suppuration, ossification occurs, and sometimes invades the whole length of the tendon, as was observed by M. Bouisson in the tendon of the psoas parvus muscle; at other times it is limited to the part diseased, forming a kind of sesamoid bone.

Syphilitic tumors occur both on the surface and in the centre of tendons. The first is the more common seat; the tumor then forms an abrupt prominence along the course of the tendon, and if it terminate in suppuration the continuity of the fibrous cord is

respected. When it is situated in the centre of the tendon, the newly-formed matter separates the fibres of the tendon and causes the tumor to assume an ovoid or fusiform shape. M. Bouisson has given an illustration of a tumor of this kind, taken from a preparation in the Museum of Pathological Anatomy of Strasburgh; it was situated in the substance of the tendon of one of the flexor muscles of the fingers. Fluctuation could be detected through the fibrous envelope, and the tumor presented nearly the form and size of an almond.

According to M. Bouisson, the affection described by Lisfranc under the name of *white nodosities of tendons* was only a form of the syphilitic nodes found on tendons; the case was that of a large tumor developed in the substance of the tendo-Achilles, in an opera dancer. It resisted every kind of local treatment; but the iodide of potassium internally administered, aided by compression and certain antiphlogistic measures, produced a complete cure. It is to be regretted that Lisfranc has not furnished us with the previous history of the case; but it is difficult not to assign this tumor a place in the category of those produced by syphilis, when we take into consideration not only the analogy between the situation and symptoms, but that in the effects derived from treatment. The iodide of potassium, the efficacy of which is well established in the accidents of confirmed syphilis, was pre-eminently the remedy if not the exclusive means of effecting a cure in Lisfranc's patient.

The *muscular tumors* resemble those of the tendons. The essay of M. Bouisson contains several interesting facts relative to these muscular tumors, which have also come under my own observation. It is sometimes difficult to determine whether this alteration has its starting point in the muscular fibre, or in the interposed cellular tissue. Analogy, observes the professor of Montpelier, would lead us to believe that the cellulo-sclerous tissue which unites the fleshy fibres, or which forms their sheath, is the part first attacked. But when the lesion is advanced, when it has manifested one of its modes of termination, either in suppuration or induration, all the anatomical elements would seem to be involved, and according to the more or less advanced state of the morbid action, the muscular fibres seem immersed in newly-formed matter; or, they become softened or destroyed, or transformed into indurated sub-cartilaginous and even osseous tissue. Such are the different conditions in which I at least have observed syphilitic muscular tumors. M. Ricord has dissected those taken from the tibialis posticus and from the ventricles of the heart, and in these cases they were evidently formed by the muscular fibres themselves.

M. Bouisson divides into three degrees the modifications which the muscular tumors undergo. In the *first degree* the muscle is the seat of a circumscribed local tumefaction, of a consistence exceeding that of œdema. A section of the diseased part displays some discolored muscular fascia, surrounded by a plastic effusion of a grayish color (a tumor of the gluteus maximus was of this kind). This state may be indicated by a sub-acute inflammation, which

causes the morbid secretion which is to pass through further transformations.

In the *second degree*, the effused matter becomes softened. If the inflammation continue with its original chronic character, the gradual elaborations of the effused product are transformed into a thready viscous fluid, similar to a solution of gum. Should an acute inflammation supervene, or there be a constant pain from the commencement, with an increase of the temperature of the part, true pus has then formed in the centre of the muscle, the softened fibres are destroyed, or are more or less considerably shattered. According to M. Bouisson, some cases of intra-pelvic abscess, arising from psoïtis or destructive inflammation of the internal iliacus, may be the result of a syphilitic inflammation of the muscles in this region. In support of his opinion, he mentions the case of a soldier, affected with an inguinal bubo consecutive to an indurated chancre. Whilst in the hospital, this patient was seized with a chronic inflammation of the psoas and iliac muscles of the left side; a tumor of considerable size formed in the pelvis, and protruded on a level with Poupart's ligament, and when opened by the bistoury, it discharges an enormous quantity of matter. The patient being subjected to an anti-syphilitic treatment completely recovered.

In the *third degree*, the non-suppurating syphilitic tumors become indurated. By successive stages of organization, they pass through the sub-cartilaginous, the cartilaginous, and osseous transformations. The latter transformation is that which has most arrested the attention of pathological anatomists. M. Bouisson has seen in the Museum of the Faculty of Medicine, of Strasbourgh, an osseous mass of very considerable size, and which was developed in the body of the quadratus femoris.

The ossification of the muscles and tendons often coincides with exostosis in different parts of the body. Prof. Dubreuil is in the possession of the skeleton of an Arab who was affected with syph ilis. In addition to numerous exostoses, there is ossification of a large number of muscles at their point of insertion. The osseous productions on this skeleton are of a styliform, laminated shape, or of various other configuration, according to the disposition of the muscles participating in the alteration. The seat of these muscular tumors is very variable. M. Bouisson has observed them in the gluteus maximus, the trapezius, the sterno-mastoideus, vastus externus, and some other muscles of the lower extremity; he has also seen them in the pectoralis major, on a subject at the same time affected with a syphilitic perichondritis of the costal cartilages. Finally, the same surgeon has observed, in the muscles of different regions, traces of ossification which might reasonably be traced to the effects of syphilis. I have already stated that M. Ricord has met with one of these tumors in the tibialis posticus.

The following is an example of a muscular tumor, situated in the rectus femoris. It will be observed that it appeared after a deep-seated syphilitic affection of the extremities, with which there existed an exostosis.

July 24th, 1845. L., æt. 38, was admitted into the *Hôpital du Midi*. He was by occupation a groom, and of a sanguine temperament. Six years before, he contracted a blennorrhagia, which lasted nine months. Three years and a half ago, he was under the care of M. Puche, for a left inguinal bubo, which appeared twelve days after a suspicious connexion; he states, that on the day following this connexion, he discovered a slight abrasion, which disappeared in the course of two or three days. The bubo was very large; it was opened, and suppurated but little. It was afterwards treated by compression. The patient was subjected to internal treatment, and remained two and a half months in the hospital. When he left, the tumor was very small, and it finally disappeared. Two months since, no accident had yet manifested itself; but at this time, pustules formed on the legs, especially on the left; the patient states that they were about as large as the end of the finger; these soon broke, and from that time there were ulcerations at the various points which the pustules had occupied. At present these ulcerations are small, round, and appear as if cut out with a punch; they are situated on both sides of the leg, and number some six or eight; the surrounding skin is of a violet-red color. Some are situated on the right arm, on a level with the epitrochlea. At the time of the eruption, the patient suffered pains in his limbs, more particularly in his legs, and about fifteen days afterwards, he discovered a prominence on the middle of the crest of the tibia; this became the seat of a dull pain, which was more severe during the night. A physician who had probably mistaken these syphilitic for varicose ulcers, recommended the use of a laced-stocking; but its application produced severe and intolerable pain. At present the tumor on the tibia is of the size of a walnut, of the hardness of bone, and painful on pressure; the skin covering it is sound. Since the patient's admission into the hospital, the pain has completely subsided; and it is particularly when he becomes fatigued that it is rendered more intense.

One day he discovered an indurated tumor on the anterior surface of the thigh; it was painful on pressure, and when the patient extended his leg, the pain increased and became immovable. This tumor, which was about a quarter of an inch in diameter, could not be attached to the femur, as it was movable, nor to the skin, for it glided readily beneath it; it appeared to belong to the rectus femoris, near the point of its insertion into the tendon uniting it to the patella.

On the 26th of July, the patient was put upon the use of the iodide of potassium (half a drachm daily). For four days after commencing the use of this remedy, he was troubled with frequent sneezing and a considerable discharge of mucosities from the nose, accompanied with a severe obstruction of the passage. August 10th, the induration on the thigh had sensibly decreased. August 15th, the ulcerations on the legs, which had been covered with the plaster of Vigo, were cicatrized, and the enlargement of the tibia was diminished one-half. From this time, forty-five grains

of the iodide were given daily. August 30th, the tumor of the thigh as well as that of the tibia had disappeared; the pain had ceased and the patient left cured.

When the muscular tumors are somewhat voluminous, every contraction produces pain, and the latter, if it had previously existed, becomes exasperated. Sometimes the affected muscle is retracted, as we have seen in the case of the psoas and iliac muscles. The tumors are movable or fixed, according to the state of relaxation or repose of the affected muscle. If in a state of rest, the tumor may readily be examined; it may be moved in various directions, thus distinguishing it from adherent tumors, and at the time we may appreciate most of its other physical characters. When the muscle contracts the tumor immediately becomes fixed, according to the duration of the contraction, and this condition may also affect its degree of resistance and sensibility.

The consistence of these tumors varies according to their duration and their mode of termination. Of a very moderate degree of hardness during their first stage, they present signs of fluctuation if the matter by which they are formed is converted into pus or a gummy matter; at length they become quite hard, and if resolution be not effected, they are frequently attacked with a subacute inflammation. They are ordinarily of a globular form, their size varying from that of a small nut to that of an orange. The color of the skin remains natural, nor does the skin adhere to the tumor. There is no unusual heat, unless inflammatory accidents are manifested; the lymphatic glands are sometimes enlarged in the vicinity, as we have seen in cases of tumors of the lips.

The muscles of the tongue, lips, and of the movable portion of the palate, are affected with these tumors; but pathological anatomy has not yet enabled us to distinguish those produced by a kind of muscular degeneration of tubercles which become developed between, and separate their fibres, tubercles which by their elimination, leave profound ulcerations. The different muscles of the larnyx itself, so often attacked in its mucous and cartilaginous elements, may likewise become involved. Finally, says M. Bouisson, if it be true that the uterine tissue participate in the characters of muscular tissue, may we not comprise in the class of tumors under consideration, certain congestions of its cervix which result from the influence of venereal disease? Long ago, I hinted at the connection existing between the tumors or tumefactions of the uterus and confirmed syphilis. On this subject, the reader may consult my remarks in my work on surgery.*

Finally, the heart may be attacked by tumors analogous to those found in the muscles of animal life, at least this may be inferred from the report and illustration of a case in the *Iconographie* of M. Ricord.

At the autopsy of a venereal subject who died suddenly, M. Ricord discovered in walls of the venticles several points of a tuberculiform alteration consisting of a hard yellow matter, creaking

* *Traité de pathologie externe et de medecine operatoire*, t. v.

under the knife, not vascular, of a scirrhous consistence at some points, at others, analogous to that of tubercular matter in process of softening. In a word, says this writer, we there found the characters of syphilitic nodes or tubercles, tertiary accidents which are often observed in the subcutaneous or submucous cellular tissue. But in this case even the cardiac fibres were involved. I shall refer to this case in describing syphilitic affections of the viscera.

Treatment.—The affections of the muscular system and its appendages appear at an advanced stage of syphilis, and as I have already stated, conjointly with the deeper-seated cutaneous affections, and especially with the lesions of the periosteum and bones, that is, at an epoch when, as a general rule, the system is debilitated and but little disposed to tolerate the effects of mercury, which, besides, in the great majority of cases has been repeatedly employed. On this account we should discard this agent, or if we do resort to it, we should administer it cautiously, and carefully watch its effects. Iodine is the remedy generally indicated, and of all the preparations the iodide of potassium is to be preferred. It should be given in large doses. We have already described the mode of employing it; the formulas which have received the most general approbation. We may dissolve half an ounce of the iodide, in eight ounces of water, and of this, a spoonful may be given in a glass of hop *tisane* twice a day, by which half a drachm of the iodide will be taken daily. The quantity may be increased to six spoonfuls, that is to one and a half drachms, daily. But, I repeat, it is seldom that I exceed forty-five grains in the day. At the same time, we may prescribe Barégés' baths, or vapor baths, especially the latter, if the patient is not too feeble. M. Bouisson states that he has advantageously employed, in some cases, the preparations of gold. I should prefer, in cases of great debility, and when the iodide of potassium has been administered for a long time, the ferruginous preparations, and afterwards resort again to the iodide of potassium, for it is always the best remedy in the last stages of syphilis.

Local treatment is seldom indicated. Of course, when the muscular tumors are painful, and when this pain is aggravated by motion, and muscular contraction, repose should be observed, and local emollient applications prescribed. In other cases, resolution may be promoted by applying flying blisters, which should be repeated, and at the same time we should resort to the use of iodine ointments.

SECTION VIII.

AFFECTIONS OF THE BONES AND PERIOSTEUM.

The bones and periosteum are so inseparably connected in their structure and diseases, that I shall consider them both under the same head. These affections, besides, resemble those of the skel-

eton resulting from other causes. Here, as in all diseases of the bones, we have pain, inflammation, tumors, necrosis, and caries. But we most generally observe certain peculiarities in these pains, and a certain progress, and consequences of the inflammation, which, with other accompanying symptoms, give them a special character; and finally, the effects of our treatment afford us aid in establishing the unity of their nature, for the same agent equally affects each variety. These shall be studied separately, and their treatment described.

I—OSTEOCOPES.

These pains accompany the lesions which I shall soon describe, but as they do sometimes exist when these lesions are not observed at the same time, they are separately described by many authors. If I conform to this custom, it is only that this symptom may be the more carefully studied. I do not, in fact, believe that this modification of sensibility is a separate disease, independent of any material lesion. When there is no external appearance of this lesion, it is because it has not yet completely formed, or rather that it is developed in a cavity formed by bone. Thus, the syphilitic disease, instead of being limited to the more superficial layers of the bone and the periosteum, may involve the deeper layers, the medullary membrane in the bones of the extremities, and the dura mater in the bones of the cranium and spine. In the latter case, the bone may continue for a long time, and even always diseased, without exhibiting any material external manifestation; and especially may this be the case, when only the internal membrane of the bone is affected. This is proved by the autopsies, which expose material alterations of the dura mater, exostoses of the inner table of the skull, without any external tumor. In my work on Surgery, I have given a representation of the frontal bone, in which two exostoses from the inner table of the skull projected into the cavity of the cranium, without any external protuberance whatever. This is what I call *exostosis*,* and it is an affection which may produce the most atrocious pains, and even fatal cerebral compression, without its existence being suspected, unless the previous history of the patient be known. I shall necessarily return to the consideration of these internal tumors and their consequences. When the osteocopes continue after the disappearance of the apparent exostosis, there is reason to suspect that there has been, at the same time, an internal and an external exostosis, and that the latter alone has disappeared, while the first still remains. I repeat, an osteocope is but a symptom of an affection of the bones, and not a distinct disease.

[In the *London Journal of Medicine* for October, 1852, (vid. also, *Ranking's Abstract*, &c., No. 16, p. 128,) Mr. Henry Lee, one of the

* *Traité de pathologie externe*, &c., t. ii., p. 395.

surgeons of the Lock Hospital, London, has published a paper, showing that long-continued pain in bone may depend, among other causes, upon the deposition of solid material, arising from the poison of syphilis. In the treatment of this affection, he recommends the operation of trephining. This idea was suggested to him by a case which occurred at the Lock Hospital during his connection with it as house-surgeon. A young and delicate woman died after severe and protracted suffering from pain in the right thigh. On examining the bone, its cancellated structure was found occupied at different parts, by a morbid deposit of a light-brown color, of a moderately firm consistence, and which was distributed in irregular patches. The parietes of the bone were greatly thickened, and a kind of cancellous structure had been developed between the original outline of the bone and the newly-formed portion. On the 29th of May, 1849, he operated on a woman, in whom the pain and swelling were confined to the immediate neighborhood of the knee-joint. As the epiphysis of the bone appeared to be the original seat of the disease, he trephined at this part. "As soon as the outer shell of bone was perforated, the cancellous structure was felt to give way under the pressure of the instrument, and some minute and separate flakes of white matter were observed to escape with the blood by its side. On the 24th August, her health was quite restored; she could raise her leg without any pain or inconvenience, and had experienced no return of the 'old pain' since leaving the hospital." On the 19th October, 1852, Mr. Langston Parker read a paper before the Medico-Chirurgical Society of Birmingham, "*On the Nature and Treatment of some painful Affections of Bone.*" In this, he states that the medullary membrane is liable to become inflamed in the tertiary stages of syphilis, and owing to the unyielding nature of the walls by which it is surrounded, this inflammation produces at times the most atrocious pains. In a case of this kind, he perforated the medullary cavity with a trephine, and the hole thus made was kept open by a tent of lint changed every morning. The relief to pain was complete; whilst previous to this operation, it had resisted all the usual remedies in such cases, blisters, opiates, iodide of potass, &c., and had at times been so excessive that she had frequently importuned me to amputate the limb." In gratefully acknowledging our obligations to the author for a copy of this interesting essay, we would observe that he recommends the trephine in cases of inflammation of the medullary membrane arising from scrofula, rheumatism, and wounds.—G. C. B.]

It is difficult to give a perfect idea of the character of these osteocopes. Sometimes, at the commencement, they seem to be wandering, the whole skeleton being painful. They are then often profound, that is, they come, in the language of the patient, from the marrow of the bones. In the majority of cases, they are fixed, yet not very clearly seated at any particular point of the skeleton. They are then acute, and lacerating; the patient feels as though the bone were strongly pressed in a very narrow space,

and as though it were being bored. Pressure in some instances does not increase the pain, whilst in others, it is aggravated by the slightest contact; in this case, it is probable that there is periostitis, or superficial ostitis. The most remarkable peculiarity of this pain is its nocturnal tendency. Indeed, it is sometimes completely absent during the day; at others, it is slight, and wandering, but it becomes aroused, fixed, and exasperated with the twilight, and is mitigated or subsides with the morn, which brings sleep to the sufferer. The pain is most severe during the first three hours of the night, and the paroxysm generally at its height about midnight. As these pains occur at the hour for retiring, and when the patient is warm in bed, this has been regarded as the exciting cause, and it is said that bakers who turn day into night, suffer from this pain during the day, that is, when they are in bed. But it should be remembered that bakers suffer more from heat when employed than they do in bed. Besides, instances have occurred where venereal patients have awakened, and remained in the open air, or have rode in a carriage during the night, and yet have suffered the same when the fatal hour arrived as when reposing in their warm couch.

The diagnosis of these pains may be attended with difficulties. They are certainly more fixed than those of a rheumatic nature already described; they return in the same place at each paroxysm, which is not the case with those belonging to the earlier stages of syphilis, and they are ordinarily exasperated by pressure, which generally relieves rheumatic pain. But these characters are not always so well marked, and I have already stated that there are wandering osteocopes, and some are not aggravated by pressure. True, the latter does not relieve them. Besides, the patient may have both rheumatism and osteocopes at the same time, for we know that all the stages of syphilis are not perfectly distinct, and the accidents called secondary may occur simultaneously with the tertiary. It is not, indeed, very rare to observe a superficial cutaneous eruption, with an affection of the bone or periosteum. Still further, it is not always possible to distinguish syphilitic from rheumatic pains, for cases of osteocopes are observed in which the pain is exasperated during the day, and relieved during the night, and *vice versâ*. Again, it is not very unusual for a patient to be affected both with rheumatism and syphilis, a circumstance which renders the diagnosis so much the more complex. Such cases have been observed among soldiers affected with the venereal disease who have contracted rheumatism in *bivouac* with washerwomen and hosiers. Thus, we see that pain alone may deceive the practitioner. The value of this symptom must be duly appreciated, but not exaggerated, and we must learn the previous history of the case, and examine the concomitant symptoms which may exist on the skin and mucous membranes, for we know that it is common to observe syphilitic eruptions or blotches during the existence of osteocopes, and it is not rare to find ulcerations in the buccal cavity, ulcerations manifested only by functional lesions of but little importance, and which may pass unobserved.

I am still compelled to add one word in relation to that error which attributes the osteocopes to mercury. This error has here assumed a serious character, for it is true that we may find mercury in the bones, and it is reported that M. Bretonneau has observed these pains in patients not affected with the venereal disease, but whose systems have absorbed much mercury. As to the cases of M. Bretonneau, I have been unable to find them; I cannot therefore judge of their value. Mercury has been discovered in precisely the bones which have never been the seat of any pain. It is known that workmen who are constantly exposed to mercurial emanations, do not suffer from osteocopes, and on the other hand, venereal patients who have abstained from mercury, have suffered in their bones and have had exostosis. Finally, these osseous pains and lesions have more than once been cured by mercury; for before the introduction of the iodide of potassium, it was particularly by mercury that these accidents, peculiar to the last stages of syphilis, were combated. However, in order to omit nothing, I should add, that in a syphilitic patient who presented cerebral symptoms, and who died after having taken much mercury, this metal was detected in the cerebral substance, (vid. the work of M. Reynaud, p. 407.)

II.—PERIOSTITIS AND OSTITIS.

Periostitis, unaccompanied by ostitis, must be extremely rare if it does really exist, for the periosteum being but the envelope of the bone, it is difficult to comprehend how it should not participate in the affections of the latter. The same regions, the same portions of the skeleton, are most generally affected both by periostitis and ostitis; thus the tibia, clavicle, ulna, radius, cranium, sternum, metacarpal bones, and the portions of these bones nearest to the skin.

[According to Mr. Stanley, the osseous node does not occur upon the cranium. "So far does the pericranium differ from periosteum in its actions under the influence of disease, that under no circumstances does its tissue become ossified. When, from syphilis, isolated portions of the pericranium inflame, circumscribed swellings arise, which are hard and painless, when consisting only of the thickened pericraneum, but soft and tender when produced by serous or purulent effusion, either beneath the pericranium or into the cellular tissue covering it. In the latter case they have received the expressive designation of soft nodes." (*Stanley on the Bones*, Am. Ed., p. 271.)—G. C. B.]

PERIOSTITIS.

The tumor formed in inflammation of the periosteum, *periostosis*, appears simultaneously with the pains already described, sometimes a few days after their first manifestation. This tumor, which

grows on the portions of the skeleton just mentioned, is not distinctly circumscribed; it is rather an engorgement, the most prominent part of which is round, and the boundaries of which are insensibly lost in the adjacent tissues. The color of the skin is at first unchanged. Sometimes, there are several periostosis on a single bone, on the tibia or on a flat bone; they are then smaller, there is a doughy feel around them, and yet the color of the skin is unchanged; their progress is ordinarily, but not always, rapid, and, most generally, the pain which is severe, is still exasperated by pressure and by every movement of the corresponding bone. The tumor or tumors are much less distinct, much more difficult of diagnosis than when they spring from a bone deeply covered by muscular layers, as is the case with the femur.

If the tumors are more superficial, so that they may be directly examined, we find them of a doughy feel; then we detect a certain degree of fluctuation; the skin at first sound, and movable over the tumor, finally adheres to it, becomes changed, and ulcerated if the disease terminate in suppuration. But this is far from being the most frequent result; periostosis, on the contrary, may terminate in complete resolution; it may also lead to the formation of exostosis, and this is a frequent result; this is the variety which I shall describe under the name of *exostosis epiphysaire.*

According to M. Ricord, periostosis may present itself under three different forms:

1st. The first variety, often of a very indolent nature, but rapid in its development, is generally of long duration, and terminates in complete resolution. The tumor contains a serous, or a seroalbuminous fluid, resembling, in some instances, scrofulous pus, and in others, synovial fluid.

2d. The second variety pursues the course of inflammatory tumors; it is acute, and well marked, or it is sub-acute. Suppuration sooner or later occurs, and it is rare then that subjacent bone is not primarily or secondarily affected.

3d. The third variety, of slower development, is, nevertheless, frequently very painful on pressure, and even when it is not touched. The tumor then consists of interlamellar plastic effusions, which may be the rudiments of exostoses, which we shall presently consider.

[The degree of hardness of a node, says Mr. Stanley, does not with certainty indicate its composition. He states that he has examined those which, from their hardness, were supposed to be osseous, but found them to consist of indurated periosteum.—G. C. B.]

I have already spoken of lesions of the periosteum and bone, of which there are no external signs, and which may produce the pains which I have already described. These *internal* tumors, when developed within the cavity of the cranium, cause disorders of a still more serious character, and here the *dura mater*, which is the internal periosteum, may play an important part. M. Reeve, in a work entitled, *Syphilitic Meningitis*, has reported a case which would seem to belong to this class. It is as follows:

"CASE.—M. F., in July, 1847, was attended by another surgeon and myself, for a paralytic affection: the rapid progress of which, together with other cerebral disturbances, alarmed the patient. He was unable to stand on his feet long enough to remove his pantaloons. His articulation was very imperfect, the combination of his ideas very defective, as well as his memory, and vision in both eyes considerably impaired. Some years before, this patient had been treated for secondary syphilis, which was manifested in the form of obstinate ulcers on the face and extremities. Shortly afterwards, he became affected with amaurosis, which continued to increase rapidly until it had terminated in the general paralysis, from which he was suffering when he came under our notice.

"From an examination of the patient, and an inquiry into the previous history of the case, I was led to suppose that the symptoms might depend upon a compression of the brain, produced by syphilitic tumors developed on the *dura mater;* but to satisfy myself more fully, I concluded to administer mercury in such a manner as to obtain its prompt and decided action. I directed that the whole scalp should be shaved, and covered with a blister, to the surface of which a drachm of strong mercurial ointment was to be applied twice a day. I was, however, alarmed by threatened coma, and the consequent prospect of a fatal result.

"Eight days afterwards, I met the surgeon above mentioned; he informed me that our patient became rapidly cured, and that he could now ascend and descend a very steep flight of stairs. To my great surprise, I one day met our patient in the street, in good health, vision perfect, and it was difficult to believe that it was the same person who had consulted me some three weeks before. He had completely regained the power of motion, sight, and articulation, and was in the perfect possession of all his faculties."

The author expresses the opinion that the preceding case would certainly have soon terminated in death, had it not been for the administration of mercury. Such is his confidence in this agent, that, in a similar case, he should indulge the strongest hope of success, notwithstanding the most decided exhaustion in the state of the patient. It is a remarkable case of cure by mercury. The editor of the *Gazette Medicale*, from which journal I have copied the above report, states, that the preparation of iodine would have a still more decided effect in cases of this kind. I do not understand how such could be desired.

OSTITIS.

Syphilitic ostitis attacks the bones already mentioned as the seat of the nocturnal pains, viz., the tibia, clavicle, sternum, cranium, ulna, and radius. I have stated, that it is difficult to admit the existence of periostitis without ostitis; indeed, the superficial layer of bone is always, or nearly always, involved in periostitis, and, most generally, it is the part first affected; an effusion then occurs between this layer and the periosteum, by which the latter be-

comes detached, and forms a tumor which may be detected if the bone be thinly covered. Instead of invading the superficial portion of the bone, ostisis may attack its parenchyma, and be therefore deeply seated; this is particularly the case, when it has existed for some time without furnishing any external indications of its presence, of which pain is the only symptom. Ostitis, whether involving the external portion, or the parenchyma of the bone, may be circumscribed—sometimes very limited, while, in other instances, it may be more extensive, invading the whole or nearly the entire bone. The bone, at first, presents here and there stains of blood, its vascular canals become developed, and contain red blood and a transparent fluid, resembling osseous substance; further, these remarks apply to all cases of incipient ostitis, whatever may be their nature. A thicker fluid, resembling that of callus, is next secreted; sometimes it is an organizable plastic matter, like that in certain cases of periostitis. The tumor, resulting from sanguineous congestion, and the products mentioned, often manifest themselves after the patient has complained of nocturnal pains; at first it is very limited, and diffused; there is no decided protrusion, except in cases of circumscribed ostitis, and when a true exostitis is about to form.

Syphylitic ostitis is generally of a slow, chronic progress; sometimes it assumes a very acute form.

A word as to the treatment of periostitis and ostitis. It is particularly in cases of the former, of course external periostitis, that we may resort to topical applications and to certain operations. Thus, there are cases of exostosis evidently inflammatory, of an acute nature, and in which the patient still retains his strength; we have then a formal indication for repeated local depletion by leeches. This first indication having been fulfilled, we may resort to the use of blisters. When the character of the tumor is less decidedly inflammatory, and the subject debilitated, the blisters may be employed without resorting to the local depletion by leeches. Their surface should be dressed with mercurial ointment. Periostitis may also be treated by incisions. These, which have particularly been recommended in acute periostosis, by Crampton, MM. Velpeau and Maisonneuve, should not be made except when the tumor is situated on a superficial bone, and when the iodide of potassium has been already administered internally, without effect. We may then reasonably infer that the resistance offered by the fibrous tissue to the expansion of the parts affected produces a kind of strangulation, which may be relieved by the incisions which are then *debridements;* but, I repeat that, first of all, the iodide of potassium should be tried, for in some instances the relief thus affected is equal to that produced by the incisions themselves.

The treatment of ostitis, especially of superficial ostitis, does not differ from that of periostotis above indicated. Here we must particularly avoid incisions, until we have administered internally a means the efficacy of which is so universally acknowledged, viz., the iodide of potassium.

[The testimony in favor of the iodide of potassium, as remarked by our author, is indeed universal, especially when the acute stage of periostitis has passed. "It rarely fails," observes Mr. Stanley, "to stop the progress of the disease, and, in much the largest proportion of cases, completely cures it. This statement of the remedial agency of iodide of potassium is to be taken in its most comprehensive sense. Whether it be the inflammation of periosteum adjacent to an exfoliating bone, or investing an enlarged bone, or that which is the consequence of scrofula, syphilis or rheumatism, there has not appeared to me to be any difference in respect to the influence of this remedy upon the disease. And, with respect to the suitable doses of it, I have but to repeat the statement already made, that my impression is in favor of administering it in doses of two or three grains, three times a day, in either decoction of sarsaparilla, or a bitter vegetable infusion, or camphor mixture" (*op. cit.* p. 275). Our own experience would lead us to rely rather on larger doses of the remedy; we do not give less than five grains three times a day, and sometimes this quantity is increased to ten and even fifteen grains for a dose.—G. C. B.]

III.—EXOSTOSIS.

A tumor actually exists in periostitis and ostitis, but the term exostosis is applied especially to the termination of these inflammations in induration. Indeed, instead of disappearing by resolution, suppuration, or mortification, the tumor formed by ostitis becomes the seat of excessive nutrition, of abnormal ossification. But periostitis or ostitis is not always necessary to the formation of an exostosis; sometimes, indeed, we observe hypertrophy independent of any previous inflammation; sometimes a plastic substance is deposited throughout the whole osseous substance, even in the medullary canal, a substance exactly resembling that mentioned when I was describing the syphilitic affections of the muscles.

Varieties.—As in other forms of exostosis, the syphilitic may be divided into two principal varieties; the parenchymatous, and the exostosis *epiphysaire.*

1. *Parenchymatous Exostosis.*—This occurs, especially, in cases of profound ostitis. The abnormal ossification may assume the character of areola, or of compact tissue. In the first case, it may consist of layers, between which are areola, constituting what authors denominate *cellular* or *laminated exostosis.* In the second case, it is the compact tissue, and according to Albers of Bonn, the cortical substance which constitutes the exostosis. If the osseous layers suffer a divarication, an osseous matter without any distinct organization has been deposited between them, and the volume of the bone becomes increased, but its weight and density have also undergone a marked increase. We have now the *eburnated exostosis*, suitable for making scalpel handles.

2. *Exostosis Epiphysaire.*—This results particularly from perios-

titis. Albers of Bonn, calls cases of this kind osteophytes, that is, new formations independent of the bone with which they are connected (at least for a certain time), since they can be removed without injury to the bone. Albers mentions an osteophyte (in the Museum of Bonn) situated on the middle of the femur of an adult; it is of an oval form following the great diameter of the bone; it has a compact envelope, and internally it is cellular. These are epiphyses, superadded bones, which, like all epiphyses, finally become incorporated with the bone; at first they are separated by a cartilaginous or osseous layer, which disappears when this abnormal epiphysis becomes incorporated with the body of the bone. We meet with cases, also, in which epiphytal exostoses are engrafted on those of the first category, on a parenchymatous exostosis. According to M. Rognetta, the epiphytal exostoses have a structure similar to that of velvet, that is, they are composed of fibres perpendicular to their surface of implantation.

Whatever may be the variety of exostosis, its form will be more or less hemispherical; it may be conical, flattened, elongated, or even almost pediculated; sometimes it is a crest similar to that formed in certain of the annular syphilitic eruptions; an example of this singular form is represented in the *Iconographie* of M. Ricord. The epiphytal exostoses are the best defined, and form the decided prominences.

Exostosis, particularly when large, may interfere with the functions of surrounding organs; and singularly alter their forms. In my work on surgery there is a representation of an exostosis of the superior maxillary bone, eleven inches in circumference, and which rendered the appearance of the patient hideous.* Sometimes, then, only trouble is in the adjacent organs which may become displaced and atrophied; thus, the exostosis of the superior maxillary bone to which I have alluded, at first interfered with the movements of the lower jaw, and ended in its dislocation. An exostosis may destroy the regularity in the movement of a limb. By compressing vessels, it may produce œdema at a greater or less distance from its seat, and by its pressure on nerves it may modify the sensibility of the parts, producing pain which must not be confounded with the special pain seated in the exostosis itself. The effects of this compression are particularly severe, when the exostosis springs from a bone entering into the formation of a cavity enclosing organs of great importance, as for example, the cranial cavity, or spinal canal. The compression of the nervous centres in these cases affects both the general and special sensibility, as well as the powers of motion, and the intelligence of the patient. A cranial exostosis may produce agitation, somnolency, paralysis, convulsions and delirium. Amaurosis is sometimes the result of an exostosis of the sphenoid or some other bone at the base of the cranium; this ocular paralysis is not very uncommon, and we may remark in passing, that when it does depend upon

* *Traité de pathologie externe*, &c., t. ii., p. 394, 3d ed.

this cause, it generally affects but one eye. Exostosis of the orbital cavity, may produce other ocular paralysis and exophthalmia.

[In the 28th vol. of the *Lond. Med. Gazette*, p. 45, is a brief notice of a case of strabismus produced by pressure from syphilitic lesions in the orbital cavity. The patient was cured by the bichloride of mercury.—G. C. B.]

Spinal exostosis is, in my opinion, more common than that of the cranium, but it most frequently remains undetected. I have already mentioned my division of exostosis into internal and external exostosis: now, it is particularly in the former cases that the diagnosis may be obscure, especially if, as I have remarked, we neglect to make ourselves acquainted with the previous history of the case. Thus, we may observe alterations of sensibility and of motion without any apparent exostosis, nothing on the cranium indicating the osseous lesion, for it may involve only the internal table of the bone. There are properly no external exostosis on the spine, for the osseous trunk being in part concealed by the chest, abdomen, anterior organs of the body, and in part covered by muscular masses, frequently we may be unaware of their existence until they have produced their most disastrous consequences. And yet, even then, if unacquainted with the antecedent circumstances of the case, we may remain inactive, when had we properly inquired into the previous history of the case, we might have rendered essential service to the patient. In the great majority of cases, the syphilitic eruptions may direct us in our inquiries. Thus we may find one of these eruptions or some traces of their previous existence, but it may so happen that the exostosis shall precede the eruption. Then, should they afterwards appear, it will shed much light on the nature of the case. M. Debout has recently (*June* 1852) read to the Surgical Society of Paris an interesting essay on muscular paralysis. One of the cases reported, is that of the paralysis of a part of the superior extremity, the diagnosis of which had been attended with difficulty. M. Nelaton, who treated the patient, suspected the existence of an exostosis of the spine. It is stated, in the essay of M. Debout, that M. Nelaton was confirmed in his suspicions by the appearance of roseola on the skin. Here then the exostosis preceded the roseola, a secondary accident generally quickly developed following a tertiary accident! This fact greatly compromises the harmony of the syphilitic triad; but the case was observed by one skilled in the *clinique*, and was fully reported in a serious essay which I heard read.

I am about to relate the particulars of a case of paralysis of the inferior extremities which I considered the result of an affection of the bones of the spine, of an exostosis. I came to this conclusion by investigating the previous history of the case, and by a careful examination of the marks upon the skin, showing the anterior existence of a syphilitic eruption of various degrees of depth. This case is remarkable not only in a practical, but is of great importance regarded in a doctrinal point of view. In fact, I inoculated the patient by means of a blister with the pus from a mucous tubercle, and I produced a specific ulceration, followed by a tu-

bercle of the skin similar to those in the syphilitic disseminated tuberclar eruption. This tubercle disappeared, leaving in its place a coppery-red spot, resembling those which continued for a long time on the patient's skin: so that this experiment, like that of M. Bourley, proves not only the inoculability of the secondary accidents, but also the possibility of a second attack of constitutional syphilis. The case has been fully and most carefully reported by my *interne*, M. Codet. I have omitted a number of details relating to the antecedents; and have retained everything which goes to establish the fact that the subject had had confirmed syphilis, and that he was laboring under tertiary accidents at the time of inoculation. I shall hereafter profit by this case, and shall there give its complete details. This patient, besides, has several times been at *la Pitié*, where he was treated by two of my colleagues, and he was a long time in my service where he was observed by several physicians, and my students who watched the progress of the different stages of the inoculation.

M., æt. 37, admitted to the *Hôpital du Midi*, Oct. 6th, 1851. First infection occurred on the 13th May, 1847; he had chancres on the penis. Afterwards was affected with blennorrhagia, orchitis, and disease of the eyes, one of which was lost. A gleet followed, and mucous tubercle about the anus. In June, 1850, the patient was in *la Pitié*, under the care of M. Piedagnel. At that time, there was a deep ulceration, of the diameter of a five-franc piece, on the the external surface of the left thigh. This was dressed with diachylon plaster and calomel in powder, and was cured in forty days. The cicatrix left by that ulcer is at present very distinct, being deep, and of a brownish-red color; there are also scars on the legs, of the same color, but less profound. This patient, who had had intense cephalalgia, now suffered somewhat less from this source, but he was attacked with pains in his legs.

During the months of October and November, 1850, the patient worked at the leather dressing; he suffered much from coldness and numbness of the feet. Walking was very fatiguing; he dragged one leg; and felt as though he was walking on cotton; he became emaciated. His appetite was irregular. He became one of the watchmen to the Magdalen asylum. Here, the paralysis of his lower extremities daily increased.

On the 10th Feb., 1851, he was again admitted to *la Pitié*, under the care of M. Becquerel. Sulphur baths were prescribed. The lumber region was cauterized, strychnine was administered, and electricity employed, but the paralysis constantly increased. The testicles became enlarged before he left his bed; they were insensible. A deep ulcer on the left leg yielded only to the application of the actual cautery; eschars formed on the sacrum, and exposed the patient to the greatest risks; he improved but slowly, and left the hospital but little relieved. Finally, on the 6th October, 1851, he entered the *Hôpital du Midi*, suffering from a relapse. M. Vidal, having learned the previous history of the case, and struck by the aspect of the cicatrices, and the nature of the enlargement of the testicles, came to the conclusion that the paralysis proceeded from

an affection of the bones of the spine, and probably from an exostosis. The patient then was placed under the influence of the iodide of potassium, taking forty-five grains daily. At the end of two months he was able to rise and walk, though with difficulty. General condition excellent. The enlargement of the testicles, which was more marked on the left than the right side, diminished considerably under the use of the iodide. The patient regained his flesh, but wished to remain awhile in the hospital, awaiting an appointment from government. In January, 1852, a small blister was applied to each thigh on account of torpor of the bladder; it was dressed with charpie soaked in the pus from mucous tubercles with which the patient was affected. This was followed by no result.

M. Vidal proposes to repeat the inoculation a future time.

Indeed, on the 12th of April, 1852, the patient, complaining of suffocation, two blisters were applied to the external and superior part of each arm.

April 13th. Both blisters were dressed with charpie, moistened in the pus of ulcerated mucous tubercles, on another patient. The inoculated subject experienced severe pains during the day.

15th. The wound on each arm is covered by a grayish, very adherent, false membrane. Suppuration is very abundant, and of a sickening odor; charpie, steeped in the same pus as that on the 13th, is placed on the blistered surfaces.

16th. The false membrane, at certain points, is wanting; a very red and granulated surface is perceptible, especially on the right arm. Dressings, soaked with the pus from mucous tubercles on another patient in the same ward, are applied to both blistered surfaces.*

17th. The blistered surface on right arm is the reddest, the false membrane has disappeared. No pain. From that time, both arms were dressed with simple cerate only.

18th. A grayish spot, apparently slightly depressed, is discovered in the middle of the excoriated surface on the right arm; on the left, the surface is of a vermilion red color; a few grayish points are here and there hardly perceptible.

19th. The small gray spot on the right arm has become slightly excavated; on the left the blistered surface is dry.

20th. The whole blistered surface on the right arm is red, with

* M. Codet has made the following note of the patients from whom the pus for the inoculation was taken:

Ward 11, No. 14.—A., painter, æt. 41, admitted April 11th, 1852, left April 19th, 1852. This patient had an indurated chancre in process of cicatrization. This chancre was of from two to two and a half months' duration. In addition to this, the patient discovered mucous tubercles about the anus and the genito-crural fold; these tubercles were the source of an abundant suppuration. On the 13th and 15th April, 1852, the patient in No. 32, Ward 11, was twice inoculated with pus from the tubercles about the anus of the patient in No. 14.

M., traveller, æt. 45, admitted March 15th, 1852, left May 23d, 1852. Had a chancre in December, 1851; this cicatrized about the 15th January, 1852; tubercles appeared about the anus, January 20th, afterwards on the nose, chin, mouth, and in the axilla, &c. A single inoculation was made with the pus from the tubercles about the anus, on patient in No. 32, Ward 11, April 16th, 1852.

the exception of the central part, which is slightly depressed, and its gray color contrasts with that of the rest of the wound. The watch-glasses, which up to this time have been used to protect the wounds, are now no longer employed.

21st. The surface of the small ulcer on the right arm has changed its color; it is now dotted with red points; there are soft and fungous fleshy granulations; in other respects it has not increased, and has a diameter of about a quarter of an inch in every direction; on its base, there is a small elevation reaching nearly on a level with its edges. On the left arm, there remains an uncicatrized surface of scarcely the diameter of a half-dime piece.

22d. The small ulcer on the right arm presents the same appearance, only the red color exceeds the gray.

23d. The ulcer on right arm seems to have become more regular; the base is nearly horizontal, the edges well defined, the color about the same, the red preponderating. Left blister completely healed.

25th. Instead of the small ulcer on the right arm, there is now a small hard tubercle, covered by a brownish crust, which remains in the place of the ulceration.

26th, 27th, 28th, 29th, 30th; 8th May. The small crust constantly remains; it is removed, and beneath it is found a small ulceration, covered with pus; its edges are distinctly defined, and it has a grayish base.

9th, 10th, 11th. The ulcer is slowly cicatrizing.

14th. The small ulcer is covered with fleshy granulations, and it is touched with the nitrate of silver. There are some tubercles on the neck, about the roots of the hair, and on the upper lip; they are covered with brownish crusts.

18th. The little ulcer is on a level with the skin, but in its place is a small hard brownish red body, which is raised but little above the level of the skin, and which is felt in the surrounding tissues to be about the size of a pea; it remained for a long time, but at length disappeared, leaving behind a coppery-red blotch of the same color, as the cicatrices on the legs; this spot still remained in the early part of June, 1852.

We here find that the first inoculation on the thighs failed. At a subsequent period, both arms were inoculated, but on one only were any effects produced. Had we been satisfied with a single inoculation, and if the second inoculation had not been made on the arms, it might have been maintained, with some show of reason, that he was no longer susceptible to the influence of syphilis. Again, this case shows the necessity before forming a decided opinion, of repeating the experiment. It will be remarked that the blistered surfaces were only twice dressed with the charpie moistened with pus. The other dressings consisted of simple cerate.

Second attack of Syphilis.—We know that exostosis has been placed completely among the last of the accidents of constitutional syphilis, that is the most classical expression of the tertiary state, after which, it is asserted, there can be no new attack of the dis-

ease. Now, the case just related, furnishes another proof that an individual may have the second attack of constitutional syphilis. Indeed, we find that this patient, after several primitive accidents, after a superficial cutaneous eruption, for four years, appeared to be cured—that is, there was no symptom of syphilis—and then came an extostosis of the tibia, an accident reputed tertiary, and simultaneously with this, a deep-seated syphilitic eruption. I recollect perfectly well this first disease, and I treated it successfully with the iodide of potassium. But, two months afterwards, the patient contracted new chancres, which were about two months in becoming cicatrized, and two years afterwards he had a blennorrhagia complicated with orchitis. Finally, in 1850, a new syphilitic eruption appeared on the right shoulder, arms, and on the abdomen; at first it presented the squamous form, then it ulcerated and suppurated profusely; finally, crusts formed, which were surrounded by large red patches. Is this last eruption to be regarded as the effect of the last chancres, or of the blennorrhagia with which he was affected in 1848? Was it not a new attack of syphilis? I am aware that it will be answered, that it was only a return of the eruption with which he had already been affected; but I would remark, 1st, that this relapse occurred somewhat late, for it was three years after the former attack; 2d, that it was more superficial than the former, with which the extososis co-existed. Indeed, the cicatrices of both still remain, and may be compared; by which it will be found that the last will be more superficial. Now, we know that the syphilitic eruptions are more profound as they occur late in the disease. Besides, if the last eruption was not produced by a second attack of syphilis, then it was a secondary, occurring after a tertiary accident. Read the following report of the progress of the case made by my *interne*, M. Codet:

L. Christian, æt. 35, glazier, of lymphatic temperament, feeble constitution, admitted June 7th, 1852, Ward 12, No. 10.

In 1839, this patient contracted a chancre on the glans; he was imprudent, and continued cohabiting with women. Soon new chancres appeared, and for three or four years he had sores on his penis. At the same time, there were vegetations on the prepuce and glans. The inguinal glands on both sides became much enlarged, but never suppurated. In 1842, he had confirmed syphilis, crusts in the hair, syphilitic eruptions which left but superficial traces behind; these accidents disappeared with scarcely any treatment. Four years afterwards (1846), L. had an exostosis of the right tibia; at the same time, there appeared deep ulcerations on the arm, legs, and a small portion of the trunk. The cicatrices of these are still quite evident. L., having been admitted to the *Hôpital du Midi* (service of M. Vidal), was placed under the influence of the iodide of potassium, and left, cured, in about three months. Two months after leaving the hospital, he contracted a new chancre. The inguinal glands did not enlarge, according to the patient's statement, and the chancre became cicatrized, in the course of two months, no other dressings having been applied than diluted Goulard's extract.

Two years later (1848), he had a blennorrhagia, accompanied with orchitis on the right side. This was cured. The patient discovered nothing more until 1850. At this time, there appeared a broad, red, slightly-elevated patch, on both shoulders. The epidermis soon became detached in the form of scales; the skin was red beneath, new scales formed, and in turn separated. Some months afterwards, the patches presenting an analogous desquamation appeared on the internal surface of the arm (on a level with the elbow) and the lower part of the abdomen (on the right side); these slowly increased for two years, and in the early part of the year 1852, a copious suppuration was established on their surface. The patient was treated by M. Gibert. The suppuration rapidly diminished; and thick crusts formed on the ulcers. The patient remained in this condition for some time, and on the 7th of June entered the *Hôpital du Midi,* service of M. Vidal. His constitution seemed only slightly debilitated. The cervical glands were nearly natural, the inguinal slightly enlarged. On the points mentioned were ulcerations, some of which (on the shoulders) were nearly twice as large as the hand; they involved the skin; their surface was covered, at certain points, with thick, reddish, and brown crusts. The surrounding parts were of a characteristic redness.

On the 8th of June, the iodide of potassium was prescribed, half a drachm to be taken daily. On the 13th, the coppery hue and the suppuration had already begun to diminish. This effect of the medicine continued for some days. On the 15th, some crusts separated; suppuration almost ceased.

June 20th. There were only some additional crusts, no more suppuration. Large plasters of Vigo were applied to all the points involved in the eruption. Under this treatment, the eruptions were promptly affected.

25th. All the crusts had separated; there remain only red cicatrices on a surface still humid.

30th. Patient is cured. The parts which were the seat of the eruption are now covered with dark red stains.

Let us pass to the treatment of exostosis. It does not differ from that of periostosis, already described. As to the internal treatment, we should, as far as possible, resort to the use of the iodide of potassium. There is less to be expected from local, operative measures, in other words, from the local abstraction of blood, blisters, incisions, &c., as, in these cases, a new bone has formed, and such superficial measures can, therefore, be of no avail; but we must resort to trephining, resections, and amputations, on which, however, we cannot decide until the exostosis, by its connections and magnitude, compromises very important functions, or the life of the patient. These operations are described in the works on surgery, to which I would refer the reader. However, I must here inculcate certain precepts which are especially applicable to resections and exostoses.

There are cases where the tumor is quite prominent, and appears to be pediculated; we should then make two semi-elliptical

incisions, by which its base, the pedicle, is exposed, and with a saw we may remove the tumor. The same incisions should be employed when the tumor has a broad base, and when there is an alteration of the surrounding soft parts, which should then be removed with the tumor. But, in the majority of cases, the crucial incision is to be preferred, for we thus obtain four flaps, the methodical dissection of which greatly enlarges the field of operation, and facilitates the movements of the saws. These instruments should vary according to the form, development, and position of the exostoses. In some cases, we require a saw with a flexible blade, in others a straight and narrow saw mounted on a handle, or we may employ a circular saw. This may be the osteotome of M. Heine, which is a chain saw, moving on the edge of a large blade. We may be compelled to resort to the gouge and chisel; the part to be operated on should then be firmly fixed, to guard against concussions, and these instruments should be made to act very obliquely, so that they may act as much as possible as cutting instruments. The rasp and bone-nippers may be used to finish the operation. In some instances we may be obliged to resort to the actual cautery, before it can be terminated.

When a tumor is very voluminous, we may, so to speak, remove it piece-meal; we divide it into several portions, which are afterwards to be separately attacked at several sittings. This would be an application of the successive *operations* (*operations en plusieurs temps*) which I have elsewhere advocated. In cases of epiphytal exostosis, it has been proposed to trust the second stage of the operation to nature. In the first place, the periosteum covering the tumor is to be incised, after it has been denuded as much as possible; the exostosis is then in a condition similar to that of a sequestrum, the complete elimination of which is to be confided to the efforts of nature. Although an advocate of successive operations, I am of the opinion that in these cases the whole should be removed at the first operation, unless it is likely to be so protracted as to endanger the life of the patient.

IV.—CARIES AND NECROSIS.

I regard ulceration and gangrene as the same lesion, for, in both cases there is mortification; in ulceration it is molecular; whilst in gangrene it is by small portions (*parcellaire*). As there is a striking analogy between the two forms of mortification of the soft parts, and the osseous lesions called *caries* and *necrosis*, I shall here apply the same principle, and consider the two last affections as two forms of the mortification of bone. Those opposed to this view of the subject must admit, at least, that caries and necrosis often coincide, especially when of syphilitic origin.

Syphilitic necrosis and caries are often a direct consequence of ostitis and of exostosis, which, in this manner, may be destroyed. I have therefore advanced two steps in the inquiry, by the previous consideration of inflammations of bone, and of osseous tumors. We have now to glance at the various portions of the skeleton

which may become affected with caries or necrosis, and to consider the effects, the accidents which these lesions may determine, and the modifications which, according to their position, they may undergo. I will commence with the bones of the cranium.

It is particularly in these cases that we observe the combination of caries and necrosis. It is unfortunate that in this situation, that the efforts of nature are so feeble in the reparation of the ravages committed by syphilis, even when the cause no longer exists. We find, indeed, that in necrosis of the bones of the cranium, the reparative action observed in other portions of the skeleton does not generally precede or follow these lesions, and yet there is nothing in the structure of the dura mater which seems opposed to ossification, calcareous formations being in fact of frequent occurrence on this membrane.

Should both tables of the skull become necrosed, as represented in fig. 140, of the 2d volume of my *Pathologie externe*, the case is one of a very serious character, and complete reparation is almost impossible. If a single table only be affected, that which remains suffices to establish the process of reparation; generally it is the external table that becomes necrosed. Then we have the *sensible* and *insensible* exfoliations of which writers speak.

A necrosis of the cranium always produces more or less irritation in the vicinity of the brain. When the subject is in ordinary health, this irritation is limited to the focus of the mortification; but indisposition, even when slight, may increase it, causing it to extend and to give rise to an encephalitis. I have seen a woman succumb, who for a long time had been affected with a necrosis of the frontal bone; the sequestrum was left to be separated by the efforts of nature, although it was movable; this woman was seized with a fit of indigestion, during which the membranes of the brain became attacked with an inflammation that terminated fatally. In such a case the use of the trephine is indicated; this operation should be performed when the disease has been of long standing, and when the effect of the general treatment affords us grounds for believing that the affection has become localized. Therefore, that we may not place too much confidence in the efforts of nature, let us endeavor to distinguish the cases and localities in which we may properly rely on these forces, and in which surgical interference should be preferred. If in many cases of necrosis of the bones of the extremities we should not trephine, does it follow that the same rule should govern us when the disease involves the cranium? Certainly not. In necrosis of the extremity we have to dread only the exhaustion produced by the protracted suppuration, whilst in the cranium the patient is constantly liable to an attack of encephalitis, which may be aroused, as already stated, by the least indisposition.

In September, 1840, a woman died at the *Lourcine;* in her case the whole frontal, and part of the parietal bones, were affected with necrosis. Yet this woman did not suffer from the disease; but, during the prevalence of an epidemic she was attacked with erysipelas, which destroyed her. Her cranium presented a singular

appearance: 1st. Simple erosion of the external table; 2d. Destruction of the entire thickness of this table; 3d. Also of the diploe; and finally perforation. It is remarkable that the diploe was the only part in which reparation had commenced. This woman always declared that she had never had the venereal disease. When she came under my care her genital organs were sound; but the bones may become diseased long after the primitive accidents have disappeared.

Caries and necrosis are rarely met with deep in the orbital cavity; when it is observed here, it is generally from the extension of similar lesions in other bones of the cranium. One of the consequences of the inflammatory tumefaction characterizing the commencement of these affections, is a compression of the optic nerve. Surgical interference is here both difficult and dangerous. Caries or necrosis may attack the small bones of the ear, and produce incurable deafness. In the commencement, when the pains are intense, and even at a more advanced period, it is difficult to determine what is the malady which we have to encounter. It is only by the concomitant symptoms, especially their connection with those of disease of other parts of the skeleton, that the diagnosis can be established. Thus, if there exist an exostosis, a necrosis or apparent caries, if in particular there is caries of the mastoid process conjoined with the symptoms of disease of the internal ear, it is very probable that the impaired hearing is due to a similar affection of the small bones of the ear. Surgery, in such cases, is impotent. The bones and cartilages of the nose may be the seat of these lesions. If the nasal bones become attacked with caries or necrosis, one of the first symptoms is pain in the part, followed by swelling on one side, the color of the skin, at first, generally remaining unchanged; it has rather a puffy feel. The skin afterwards becomes red; by pressing on the nose we discover that its framework is less resisting, and that we occasionally produce a crepitus. Matter, more or less purulent, issues when the patient blows his nose, and at length, small fragments of bone are expelled with this matter; the skin, which on the dorsum of the nose is red, becomes more inflamed, and sometimes a small abscess is formed, which opens spontaneously; a fistulous opening exists for some time. It is generally at that point where the mucous membrane is inflamed, more or less thickened and perforated, that the osseous fragments are detached. After they have been expelled, the skin sinks in proportion to the extent of the loss of substance; the nose remains more or less depressed, with or without a cicatrix, as there may or may not have existed previous inflammation or subcutaneous suppuration. If both bones have been simultaneously affected, the depression of the skin is greater and the deformity more decided. Should there have been a lesion of the lateral cartilages, of those of the alæ of the nose, septum, sub-septum, and the osseous plates entering into the composition of the nose, the deformity will be still more considerable. In all these cases, the skin may have retained its integrity, but when the affection has commenced under the form of the syphilitic tuber-

cular eruption accompanied with ulceration, the destruction of the skin leaving a part of the interior of the nasal cavity exposed, the deformity is frightful, and can be repaired only by a rhinoplastic operation.

The diagnosis is obscure, only when the nasal affection is deep-seated. But the sanious, fetid suppuration, and the discharge of fragments of bone, soon render the nature of the disease quite evident. It is particularly in cases where the posterior part of the septum is necrosed, carious, and destroyed, that the voice becomes seriously deranged.

The surgeon should watch his opportunity for extracting the sequestra; these, acting as foreign bodies, may maintain a suppuration that shall exhaust the patient's strength. Therefore, with dressing or dissecting forceps, he should occasionally attempt their removal. He need not hesitate to make incisions on the dorsum of the nose, when he can feel the crepitus already mentioned.

Necrosis, that is, the mortification of important osseous structures, may often involve the palatine vault. After a fixed but ordinarily acute pain, has existed for awhile in the palatine region, there supervenes a violet-red, fungous-like tumefaction of the mucous membrane covering the affected bones; then, a sanious pus which sometimes renders the mouth offensive, issues through an opening caused by the progress of the disease in this small tumor. A portion of bone becomes detached leaving an opening, causing a communication between the buccal and the nasal cavities. If this loss of substance is not too great, it may become completely closed by granulation. But more frequently it remains, though it is sometimes almost imperceptible. When the loss of substance is more considerable, after the edges have been approximated as much as possible by the reparative process, these borders present a firm cicatrix, resulting from the adhesion of the soft parts to the circumference of the osseous plate, and distinctly circumscribing the fistulous opening, which is circular, oval, or irregular. The patient then suffers all the unpleasant consequences resulting from this unnatural communication, and an *obturator* is the only means that can afford relief.

I have very frequently observed necrosis of the superior maxillary bone; in three cases I early removed the sequestrum, which I always found resting on that part of the alveolar process corresponding with canine and the smaller molar teeth.

Necrosis of the inferior is generally considered of more common occurrence than that of the superior maxillary bone. I have met with but one case of it at the *Maison de Santé* of the *faubourg* St. Denis; the sequestrum comprised nearly the entire body of the bone, which I removed in the presence of M. Morel.

The cartilages and bones of the larynx may be the seat of necrosis, and the dead portions may be expelled in the efforts to expectorate. Here it is of immense importance to remove the sequestra early in the disease; for they act as foreign substances, and maintain an irritation and suppuration, and in many cases

may expose the patient to the dangers of a laryngeal phthisis, which then actually exists.

The bones of the vertebræ most frequently affected with caries and necrosis, are those opposite to the pharynx; syphilitic caries, involving different portions of the spinal column, especially the lumbar region, have been known to produce abscesses by congestion. M. Baumés remarks that they have occurred when the caries affected the lateral or posterior surface, and that when it is seated in the anterior portion, an angular curvature is produced by the sinking of the bodies of the vertebra.

In the category of the causes of white swellings of the joints, the syphilitic diathesis is always included; but the diagnosis of a syphilitic white swelling is still to be made; the nocturnal exacerbation is the only symptom that can be regarded as characteristic! The pathological anatomy itself of a syphilitic diseased joint is yet, and I think will long remain to be made, for those possessing truly this character are extremely rare.

I have not referred to the internal treatment of caries and necrosis in these cases; it is the same already frequently mentioned in this article, the iodide of potassium forming the basis of the whole. Still, as in some instances the patient may have used this medicine for a long time, and the bones may be profoundly affected, it will be well in such cases to try iron alone, or combined with iodine. I have prescribed ferruginous pills, and those of the proto-iodide of iron, and these have sometimes succeeded when the caries have been profound, and had reduced the patient to a state of extreme cachexy. We may here also administer cod-liver oil, or the iodureted oil, according to the formula of M. Personne, pharmacien at the *Hôpital du Midi*.

But the surgeon should closely watch the progress of the disease, so as to embrace the earliest opportunity of removing the sequestrum, or the carious portion of bone. The service thus rendered to the patient cannot be too highly appreciated; for frequently the syphilitic virus, the primary cause of the disease, no longer exists, the effects only remaining, which, in turn, may produce serious consequences, such as exhaustion of the strength of the patient.

SECTION IX.

AFFECTIONS OF THE VISCERA.

Since the venereal disease has been properly investigated, it has been admitted that the syphilitic virus may infect the blood and other fluids of the body; the special lesions of the tissues and organs, and more especially those of the viscera now under consideration, have also been recognized. At one period, indeed, syphilis figured in the whole catalogue of diseases; it was connected with them all. This exaggeration was followed by another, and of an opposite kind, denying the existence of syphilitic affections of the viscera. The advocates of this doctrine were not sparing in

their sarcasms against those who entertained a different belief. At the present day, the ancient doctrine seems likely to be revived, but it makes slow progress, as yet it has only probabilities in its support. As the history of syphilitic affections of the viscera has yet to be made, I shall attempt to give merely an outline of the subject.

In the first place, it is unnecessary to force analogy in order to admit syphilis as an occasional cause of certain affections, of which the germ or predisposition already exists. Direct observation here confirms analogy; indeed, more than one latent phthisis has been aroused under the influence of syphilis. Of this there can be no question. It is not in the thoracic viscera alone that the tubercular element has been called into action by this influence, but it has likewise been the cause of similar affections of the lymphatic system, and more than one scrofulous bubo has been the result of this agency.

But what is most difficult to be established is the existence of visceral lesions essentially syphilitic, having anatomical characters and a symptomatology proving their specific nature. In analyzing the lesions of the internal organs which have been observed, I will prove what I have here asserted, and at the same time furnish the young practitioner, anxious to elucidate this point, with the few materials, or, more properly speaking, the few notes which I have been able to collect.

I.—CEREBRAL AFFECTIONS.

Tubercles resembling the deep-seated tubercles of the cellular tissue (*gummata*) have been observed in the brain. But can these tubercles be distinguished anatomically from other tubercles, from those commonly described in works on pathology, and which produce such fatal havoc when seated in the lungs? The same obscurity prevails on the symptomatology, for the lesions of sensation, motion, and intellect, may all result from a cerebral affection entirely independent of syphilis. Still further, the syphilitic diathesis may produce other effects on the cranium, which may be confounded with the *gummata* of the brain, as, for example, tumors of the dura mater, and exostoses of the cranium. And here we can derive no assistance from treatment in clearing up our diagnosis, for the cranial, like the cerebral lesion, may be equally modified by the same agent, viz., the iodide of potassium; indeed, under the influence of this therapeutic agent, the symptoms and accidents produced by both of these affections may be made to disappear. The age, antecedents, and concomitant symptoms, may assist the practitioner, and conduct him to probabilities approaching to certainty. Thus, what is remarkable, I have observed almost simultaneously two cases of serious encephalic disease, attended with symptoms of cerebral disturbance.

By means which I am about to mention, I was enabled to establish the *probability* of the syphilitic nature of both affections, and

of their seat. Both patients were young, being scarcely thirty years of age. The first had been attended by a physician who became confined to his bed. The young man was attacked with symptoms of apoplexy. One of my colleagues, M. A. Robert,* was called, and not knowing the previous history of the case, treated the patient for ordinary apoplexy. The most alarming symptoms having been removed, the intellectual faculties remained impaired, memory, especially, being at times lost. My colleague was not aware that this young man had had an indurated chancre, and syphilitic eruptions on the skin, and the patient, who had concealed his condition from his family and friends, was not forward in making him a confidant. Finally a consultation was held; as I had treated the young man for his syphilitic attack, I was called. The iodide of potassium was prescribed in large doses; one and a quarter drachms were given daily. The intellectual faculties were rapidly re-established, and the patient suffered nothing more from his attack. Therefore, taking into consideration the age of the patient, the syphilitic antecedents, and the rapid effects of the iodide of potassium, I came to the conclusion that this was not a case of ordinary apoplexy, but a syphilitic affection of the head. Were I to venture on a further expression of my opinion of the nature of this case, I should say, that it was not an osseous lesion, an exostosis of the cranium, but an affection of the brain itself, the commencement of plastic deposition, for the effects of an exostosis are not so speedily removed. I acknowledge, however, that this is mere conjecture, and it will have been remarked, that the skilful surgeon first in attendance discovered nothing peculiar in the first symptoms, or which might indicate a specific affection. Here the knowledge of the previous history of the case, and of the effects of the iodide of potassium, were wanting in establishing the diagnosis.

The second patient lived in the suburbs. He had hemiplegia, which was slowly developed. The antecedents in his case were chancre, cutaneous eruptions, and syphilitic sarcocele. I had previously treated these affections. Being aware, therefore, of the previous history of the case, and considering, too, that the patient was quite young to be attacked with ordinary apoplexy, I thought it *exceedingly probable* that this was a syphilitic encephalic affection. I went so far even as to presume upon the seat of the disease. The slow development of the paralysis, the fact that there existed an exostosis of the lower jaw, led me to diagnose a cranial exostosis. In this I was confirmed by the time required to cure the patient (a year), the same that was required to remove the exostosis of the lower jaw. I repeat, that we are here dealing in probabilities, but in probabilities possessing a value which the most attentive examination of facts in medicine cannot always impart. Whatever may be the scientific bearing of these two cases, or theoretical interpretation, they remain two instances of cure worthy of the practitioner's attention.

* On account of the standing of the patient, I am compelled to omit the name of the family physician, who, besides, will readily recognize whom I mean.

[Dr. Budd has reported in the *Lond. Med. Gazette*, for May, 1842, three cases in which apoplexy occurred in the advanced stages of syphilis. These patients had been for some time affected with periostitis, and two of them had had a syphilitic eruption (rupia). Dr. B. says, it may admit of question, whether the apoplexy resulted from the immediate action of the syphilitic virus on the brain, or whether it was consequent on syphilitic inflammation of the bones of the head. In connection with this subject, we refer, with much pleasure, to the admirable papers by Dr. John Watson, of the New York Hospital, "*On some of the Remote Effects of Syphilis*," which were published in the first and fifth volumes of the *New York Journal of Medicine and the Collateral Sciences*, (1843, 1845.) Dr. W. has reported some eight cases of hemiplegia and epilepsy, resulting from syphilitic disease of the cranial bones and envelopes, and tubercular deposits in the substance of the brain itself. In one of these cases, the patient, contrary to the advice of Dr. W., was trephined, his cerebral symptoms having been attributed to a blow on the head received some two years previously. He died some months afterwards; extensive changes were found to have taken place within the brain and its envelopes, and the deposits of yellowish dirty-white color in the former, Dr. W. regarded as syphilitic tubercle. The cases above mentioned, together with those mentioned by Mr. Inman (*Lond. Med. Gazette*, July, 1843), disprove the assertion of Sir Astley Cooper, that the brain, abdominal, and thoracic viscera, are incapable of being infected by the syphilitic poison. (*On the Testis*, 2d Lond. Ed., p. 166.) We regard Dr. Watson's contributions by far the most valuable yet made on this subject, for his remarks are founded on the autopsies made by himself.—G. C. B.]

II.—HEPATIC AFFECTIONS.

Syphilitic affections of the liver in the infant have been carefully investigated by M. Gubler. He has found, as the anatomical lesion, a fibro-plastic induration, which may be partial or general. When I come to treat of *infantile syphilis* I shall carefully describe this double lesion.

In the *Iconographie* of M. Ricord (pl. 30) is represented a partial induration, a very remarkable nucleus in the liver of an adult. The subject, who had died from a deep-seated affection of the larynx, presented serious anatomical alterations of this organ. The liver, of medium size, was of the ordinary color and consistence; on the convex surface of its lobe was found a tumor, perfectly round, as large as a walnut, somewhat prominent, and involving nearly the whole substance of the organ. This tumor, consisting of two parts, appeared to be surrounded by a kind of cyst; it was composed of a hard, dense, very homogeneous tissue, crackling a little under the knife, and offering no traces of vascularity. It seemed to present a striking analogy with certain tumors of the cellular tissue, which are frequently observed in tertiary syphilis. As to the symptomatology, it is stated in the report:

"For some months the patient had suffered from cholicky pains, which, from his description, resembled those produced by biliary calculi. Further, he had had several attacks of jaundice, traces of which were still apparent on his admission to the *Maison de Santé*."

It will be seen that there are no peculiar symptoms of the disease, and that they might have been referred to several different affections of the organ. Besides, in examining the colored plate representing the above tumor, it is not difficult to recognize a form of cirrhosis denominated by Laennec, *cirrhosis in masses*. Therefore, the history of syphilitic disease is yet far from being complete; it has not even been commenced.

III.—CARDIAC AFFECTIONS.

Syphilitic affections of the heart are almost unknown. In the *Iconographie* of M. Ricord, however, is the representation of a lesion which this physician regarded as belonging to the class of tumors called *gummata*. The subject had had repeated attacks of chancre on the penis, accompanied with vegetations; these were followed by mucous tubercles about the anus. Finally, groups of tubercles, which ulcerated, appeared on various portions of the skin. He was treated with the proto-iodide of mercury and the iodide of potassium, for eleven days, when, in going to stool, at seven o'clock in the morning, he was suddenly attacked with giddiness; he returned to his ward, threw himself on the bed, and expired in less than five minutes. Previous to this fatal event, with the exception of the accidents mentioned, "there were no symptoms which could have led to the suspicion of any deep-seated affection."

"Before death, the face of the patient became of a violet color, after which it turned pale; he had to utter these words only: 'I feel very sick;' (*Je me sens très mal.*)

"The autopsy, made twenty-four hours after death, disclosed the following appearances:

"With the exception of the heart and lungs, all the viscera were sound, but presented very strong marks of congestion. The heart was hypertrophied, its cavities were filled with clots of blood, of slight consistence. The endocardium of the right ventricle exceeded two-fifths of a line in thickness; it was of a dull white color, and of fibrous consistence.

"The endocardium of the left ventricle presented nothing abnormal; but, in that portion of the cavity next the apex, we found an adherent layer of very friable blood, beneath which was a kind of apoplectic clot, which occupied the whole thickness of the wall of the ventricle. The blood was intimately united with the muscular substance, the normal consistence of which was destroyed, by which we were led to infer that the affection was not the result of an accident; the pericardium on a level with this clot was puffed up, and thickened. The apex of the heart was covered externally by a false membrane, one and one-fifth of a line in thickness. The walls of the ventricles at several points presented a tuberculiform alteration consisting of a firm yellow matter, cracking beneath the

knife, not vascular, of a schirrous consistence at certain points, and at others, of an aspect analogous to that of a tubercular matter in process of softening. In a word, we found here the character of the syphilitic node or tubercle, tertiary accidents which are frequently observed in the subcutaneous or sub-mucous cellular tissue.

"No muscular fibres were found compressed by all these morbid productions, for the degenerated mass was composed of the muscular fibre itself. Besides, we were able to follow the evolution of this transformation, which seemed to have commenced by a union of the blood with the fleshy fibre. And, indeed, in this condition the lesion still existed at several points. In others, it presented a yellow color, and had reached, centrally, a greater development. But at the circumference, the combination of the blood with the fleshy fibre which took place in the commencement of the affection, was still evident. The lungs, perfectly sound at their apex, presented at their base several tuberculiform transformations as large as a pea, and precisely similar to those found in the heart."*

My former friend, Professor Forget, is disposed to regard these supposed syphilitic vegetations of the heart as the offspring of the imagination, as well as most of the other syphilitic lesions which it has been pretended have been found in this organ.†

IV.—PULMONARY AFFECTIONS.

The lungs and bronchi have always been regarded as especially liable to syphilitic lesions. M. G. S. Lagneau, son of the venerable author of the *Traité des maladies syphilitiques*, has collected all the recorded facts which relate to these affections, and in a reliable work has attempted to show that syphilis affects the lungs and bronchia:

1st. By producing alterations essentially syphilitic, that is, acknowledging syphilis as the exciting cause. These alterations he divides into two classes, first, affections generally slight, comprising acute inflammation of the bronchia and the parenchyma of the lungs, intermittent bronchial inflammation, or asthma, and chronic bronchitis. Secondly, we have more serious disorders, by most authors termed *phthisis*, comprehending chronic bronchitis, with ulceration, chronic inflammation of the parenchyma and lymphatic glands, pleuritis, syphilitic tuberculization, or the formation of the gummy tumors (*gummata*).

2d. It may rouse into action tubercles which had existed before the syphilitic infections, or manifest its effects by exciting the evolution of tubercles, the progress of which it has a tendency to accelerate.

According to M. G. S. Lagneau, every organic lesion found in individuals affected with syphilitic pulmonary disease may be referred to one of these two divisions. Among the anatom-patho·

* Vid. report of the case by M. Gabalda, in the *Iconographie* of M. Ricord.

† *Precis analytique des maladies du cœur*, p. 261.

logical conditions peculiar to the first, that is, the lesions essentially syphilitic, the author specifies the following:

Chronic Ulcerative Inflammation.—This consists in small, isolated or confluent ulcerations, united, occupying the whole or a part of the bronchi, becoming sometimes very numerous in the minute ramifications of the bronchi, which are then filled with purulent matter.

Inflammation and Ulceration of the Lymphatic Glands, and of the Pulmonary Parenchyma.—Inflammation of the pulmonary tissue presents numerous degrees, from the simple congestion to hepatization, and the formation of purulent foci. These ulcers, and purulent collections, form especially in the middle lobe; the cavity containing the pus is surrounded neither by a membrane, nor induration; sometimes the lung appears externally sound, and no exudation is observed. In the young infant, we find also abscesses, indurations, and extensive suppurations; in the recently-born infant we meet with indurated nuclei, impermeable to the air, friable, hepatized, occupying, by preference, the apex of the lung. These nuclei, of different dimensions, generally numerous, become yellow, compact, a cavity forms in their centre, it present walls of greater or less thickness, infiltrated with pus; it is filled by a yellow, seropurulent fluid. The microscope detects in this fluid the presence of pus; the surface of the lungs is bosselated, arising from these purulent collections, adhesions exist between the pleural surfaces, and sometimes the parenchyma is compact, yellow, and friable. At other times the virus exerts its influence particularly on the pulmonary, lymphatic ganglia, which become engorged, indurated, and terminate in suppuration. These observations apply particularly to the lesions recently observed by M. Depaul, and which I shall describe more fully when I treat of *infantile syphilis.*

Pleuritis and Effusion.—The pleura may become raised at various points in the form of blisters, in patches of from two-thirds of an inch to two inches in diameter, by the effusion of a thick, yellow mellicerous fluid; sometimes also there may be a more extensive effusion.

The *gummy tumors* (*deep-seated syphilitic tubercles*), involve the parenchyma; sometimes they are very numerous; and terminate slowly in suppuration. In order to establish their anatom-pathological condition, M. Lagneau copies from Astruc, Schrœder, and Dr. McCarthy. Among other things, he inserts the following passage from an article written by M. Foucart, after a lecture of M. Ricord: "According to this physician, one of the situations in which the gummy tumors are developed more frequently than is generally supposed, and a knowledge of the existence of which is most important, is the pulmonary tissue." For several years, he states, we have had quite a number of autopsies which led us to the conclusion that there are pulmonary lesions which must of necessity be referred to syphilitic tubercles. It pursues the same course here as in other parts of the body, it is the same form, the same development, the same fatal termination in suppuration. The patients expectorate pus as in the most advanced stages of

pulmonary tubercles; they become emaciated, feeble, and death soon follows.*

This extract is from a lecture delivered by Ricord in 1845. In his *Iconographie*, he has been more precise in his anatomy, and less explicit as regards the nature of the pulmonary affections, for he speaks in presence of the cadaver; for example, in describing the autopsy of a venereal patient, it is stated in his work; "Violet-colored spots were found, beneath which were indurated nuclei, which, at first view, resembled those found in the lungs of those who have died from pneumonia, the result of purulent absorption. These nuclei when incised, were found to contain no pus, but presented a deep red, friable tissue. In the left lung were found five small cavities half filled with a whitish viscous matter, together with a grayish pultaceous matter which appeared to proceed from the walls of the cavity, which were soft and of a grayish color. The largest of these cavities would have contained a small nut. They were situated near to each other at the lower portion and and near the external border of the lung."† The report is followed by the following reflections: "These alterations leave us in uncertainty as regards their nature, and it would be difficult to say whether they are syphilitic, whether these cavities contained tertiary tubercles, which became softened and expelled, or whether they were the results of purulent absorption." M. Ricord here notices another fact;‡ there can be no doubt that a *very considerable number of autopsies* are required to establish the fact, that these pulmonary lesions are due to syphilitic tubercles.

It is to be regretted that M. G. Lagneau did not have under his eyes the version given in the *Iconographie*, which singularly modifies the report in the *Gazette des Hôpitaux*. Doubtless after such a contrast, M. Lagneau would have been more reluctant to admit these pulmonary lesions to be *essentially* syphilitic.

M. Lagneau enters fully into the symptomatology of these affections. But, M. Cazenave, who had reviewed his work, remarks, that notwithstanding his attempt to frame a table of symptoms, it will still be very difficult, even after the most careful study, to select from the group those peculiar to acute or chronic bronchitis, ulcerated or non-ulcerated, to asthma, pleurisy, chronic pneumonia, and the tuberculization *essentially syphilitic*. In the majority of cases, likewise, accident or some unexpected revelation has led to the formation of a diagnosis rather than any particular symptomatology.§

It was accident, as stated by M. Cazenave, that enabled me to effect a cure in a patient supposed to be laboring under the last stages of phthisis. This patient kept a lodging-house near the *porte* St. Martin. He had been treated, and in common language,

* Vid. *Gazette des Hôpitaux*, 1845, t. vii., p. 610. Reprint of a lecture of M. Ricord on tertiary accidents.

† Vid. *Iconographie*.

‡ Only, it is stated in the report of the autopsy already quoted, that in a case of syphilitic disease of the heart, the lungs presented analogous lesions.

§ *Annales des maladies de la peau et de la syphilis*, Jan. 1852.

condemned by a distinguished member of the Academy of Medicine. This patient was brought to me by a friend, and I was about to send him to a physician, when he showed me a tumor on the clavicle. This discovery led me to examine him more closely, and to inquire for the previous history of the case. He had had chancres on the penis four years before the appearance of his pulmonary trouble and the tumor on the clavicle. He coughed much, especially morning and evening; he showed me nummular expectoration; he had night sweats; his emaciation was extreme; and respiration constantly laborious. I was wrong in not auscultating the chest. But I placed the patient on the use of the iodide of potassium: at first, in fifteen-grain doses, which was increased to one drachm daily. In less than a month, he had improved beyond all expectation, and in less than two months he had resumed his occupation. At present, six weeks from the commencement of the treatment, the patient is in the enjoyment of most excellent health.

We may reasonably conclude that syphilis, in this case, exerted a powerful influence in the production of the pulmonary disease which was destroying the patient. But this opinion I was enabled to form only from the concomitant symptoms of the clavicular tumor, and the antecedents as manifested in the chancres on the penis, and the effects of the iodide of potassium. The symptomatology, especially as derived from the physical examination of the chest, were wanting, and I should not have been warranted in classing this affection among those *essentially syphilitic.*

Such facts are, therefore, insufficient to settle the scientific question. But they possess a real value in a practical point of view. They teach us to carefully examine the antecedents of the case, when there exists chronic pulmonary disease, and not to decide upon an anti-venereal treatment, unless the previous history of the case leads to the suspicion of a syphilitic infection. The more I study the chronic affections of the viscera, those called organic, the more firmly persuaded am I that patients are allowed to perish by what is regarded as ordinary tubercular disease, from the want of an anti-syphilitic treatment.

The following case, to which M. Lagneau attaches a truly scientific value, is, in my opinion, but the counterpart of that which I have minutely detailed.

"An actor, æt. 46, M., affected with syphilis for more than twenty years, presented a periostitis on the anterior surface of the left tibia, and suffered from nocturnal pains in all his limbs. With these symptoms were combined all the rational signs of the last stages of phthisis, and there was every reason to believe that his existence would soon be terminated, in the country, whither he had been sent to live on ass's milk. When my father was called, together with M. Andral, to consult with M. Marc, when the patient made a temporary visit to Paris, he presented the following symptoms: cough, puriform expectoration, sweats, pains in the chest, low fever, prostration, marasmus, and hemoptysis; no physical signs were discovered on auscultation. The result of the auscultation was, to place the patient under an anti-syphilitic

treatment, which was carried out under the direction of M. Marc, according to the plan of Scatigna—that is, by the daily application of half a drachm of the Neapolitan ointment to the axillæ, and the use of a sudorific *tisane* with milk. On the thirteenth day of the commencement of this treatment, the pains in the chest and limbs, the low fever, prostration and tumefaction of the periosteum, were already dissipated. After the thirtieth application of the ointment, the patient had regained much of his ordinary *embonpoint*, and the cough had ceased; on the fortieth day the cure was complete. The patient devoted himself for some time to his profession, singing, and then retired into the province. M. Marc has learned that he afterwards died—of what malady, however, he was not informed.*

The symptomalogy of these pulmonary affections, which M. Lagneau regards as essentially syphilitic, not having been made either by this author, or by other writers on syphilis, we can appreciate the difficulties, I might almost say the impossibility of distinguishing them from, for example, the tubercular pulmonary affections which had previously existed, and which have been roused into action by the syphilitic influence, which has hastened their development and the accidents to which they give rise.

In conclusion I would remark, in regard to the knowledge which we possess of the syphilitic affections of the viscera: 1st, that analogy confirms their existence; 2d, that this analogy is corroborated by certain facts in pathological anatomy; 3d, that certain cures of serious chronic pulmonary affections, with their antecedents or concomitant syphilitic symptoms, that these cures, being effected by specific treatment after other means have failed, do not completely disclose the syphilitic nature of these pulmonary affections, but should receive great consideration, especially by the practitioner, who, on the least suspicion of the agency of syphilis in the disease, should resort to specific treatment.

[The attention of many of the older writers was directed to the subject of syphilitic diseases of the lungs, among whom we may mention Severinus, Sauvage, Portal, Morgagni, Hoffman, Hewson, and Morton; among the more modern authors we may reckon Drs. Graves, Stokes, Byrne, Sims, Munk, and John Watson. Dr. Munk has published two papers upon this subject, in the *London Medical Gazette* (vol. ii., new series, pp. 179, 218), which are worthy of a perusal. We have seen cases of pulmonary disease which, there was every reason to suppose, were produced by the action of the syphilitic virus, yet it is difficult, if not impossible, to decide upon the actual influence of this cause. Dr. John Watson has reported a case, where the patient, just before death, was seized with hemoptysis, which was so profuse as to carry him off almost instantly. In the examination, a ragged, circular ulcer, nearly as large as a cent, with dark, purpled edges, was found in the left bronchus, just beyond the bifurcation; this had perforated the bronchial tube, communicating with a sort of cavity in the cellu-

* *Des maladies pulmonaires causées ou influencées par la syphilis*, by G. S. Lagneau.

lar tissue outside of the tube, and thence extending to one of the left branches of the bronchial artery, into which it had opened. There was a second ulcer within the same bronchial tube, about one inch and a half or two inches deep, as large as a half-dime piece. This had nearly perforated the bronchial tube, and had an irregular base, with ragged and uneven edges of the same color as the other. Previous to the death of this patient, he had been under the care of Dr. Buck, in the New York Hospital, for a secondary ulcer over the parotid region, and there were some spots of syphilitic rupia in other parts of the body with slight cough. (*New York Journal of Medicine*, July, 1843, p. 57.)—G. C. B.]

PART THIRD.

INFANTILE SYPHILIS.

The study of infantile syphilis cannot be separated from its necessary connections with syphilis in the parent, the condition of the nurse, and the early care which it may receive. Besides, it is not syphilis in the new-born child only that we have here to consider, but frequently that of the embryo, the fœtus, &c., &c. In the investigation of the causes, I shall examine the influence of the parents and the nurse. It is obvious how deeply the family, society, and legal medicine are interested in the questions now to be discussed, and yet in the most widely-circulated works on venereal diseases, this subject has received but little attention! In the first place, I shall describe the symptoms and the pathological anatomy, thus commencing with what admits of least dispute; afterwards, I shall enter into the consideration of the causes, under which head are included the influence of the parents and the nurse upon the child, and *vice versâ*. Of course, the question of the transmissibility of syphilis by the blood, the products of secretion, and the consecutive accidents, will here be renewed, and its solution in favor of the contagionists no longer admits of doubt.

Symptoms.—Infants who have suffered from the syphilitic influence *in utero*, are born shrivelled and emaciated; their flesh is soft, skin of an earthy color, flabby and wrinkled, giving them a senile appearance. In the language of Doublet, they are "miniatures of decrepitude;" some perish before any evidence of syphilis is manifested; in others, we observe the accidents and symptoms which I shall soon describe, and we meet even with vegetations, as shown by the several cases reported in the work of Bertin. Such facts have therefore been unjustly denied. The majority of children are born with the appearances of the most perfect health. Some weeks or months after birth, they present symptoms or accidents of constitutional syphilis. Bertin remarks, that according to his observation, these symptoms or accidents are developed from the third to the sixth week; but he admits that they may appear before this period.

The attention of the nurse is first arrested by the difficulty of respiration, and a snuffling noise, especially whilst suckling. This is the commencement of the syphilitic coryza. The nose is observed soon to become red, and tumefied; the nostrils crack, and

almost constantly discharge a purulent humor mixed with blood. A portion of this fluid, as it becomes dried, forms crusts which obstruct the nasal cavities; the little patient breathes by the mouth only, which is constantly more or less open. The lining membrane of the nose, of a livid red color, tumefied and softened, is often the seat of superficial ulcerations, and bleeds from the slightest contact. Respiration through the nose, at first embarrassed, becomes more difficult; suction of the breast is at length rendered impossible, and if this condition be prolonged, the child perishes from inanition.

When decided inflammation exists, we should use, at first, emollient, and afterwards astringent lotions, or cauterization with the nitrate of silver.

M. A. Deville has furnished M. Bouchut an account of four cases of infantile syphilis in which coryza existed, and all of these children were born of mothers affected with syphilis. Three of them presented on their bodies signs of syphilitic infection. They were treated with iodide of potassium in doses of from seven to fifteen grains a day, under which their condition rapidly improved. Three were perfectly cured; the fourth died from another disease, the small-pox.*

It is generally admitted by writers that infantile syphilis most frequently appears under the pustular form. Bertin, in his special treatise, observes: "*Pustules* were symptoms most commonly observed in infantile syphilis during my connection with the venereal hospital." We generally meet with the mucous tubercle, such as I have described in the latter part of the first section of this work. In these cases they are found not only in the regions already specified, but wherever folds in the skin exist, as for example, on the thighs, buttocks, and in the axillæ. Sometimes they occur in patches more or less broad, sometimes the tubercular or the lenticular form is most strongly marked. In parts where the skin becomes heated, these tubercles discharge, even abundantly, a matter of an offensive odor, which produces more or less erythema or eczema in the vicinity. At other times the tubercles are dry, and covered with a kind of scaly layer.

The mucous membrane is also the seat of these tubercles which then become complicated with cracks or small fissures. Thus, at the commissure of the lips, at the side of a tubercle, we observe a fissure which has a tendency to heal, but which is overcome by the movements required in suction of the breast, which act is attended with pain. On the tongue, we notice little whitish lenticular elevations, as if the nitrate of silver had been applied to its surface; if possible to open the mouth, we observe these white spots extending towards the throat and pharynx. The same lesion has been supposed to occur in the intestinal canal, and to have produced bloody mucous stools. The microscope has detected the presence of cryptogamia in the secretions of the lips and mouth.

The ecthymatous form of pustule is also frequent in infantile

* Bouchut, *Traité pratique des maladies des nouveaux-nés*, p. 869.

syphilis. "When," says M. Gibert, "we meet with a really syphilitic eruption in the child, it ordinarily assumes the form of ecthyma."* It is observed even on the palms of the hands, and the soles of the feet, here replacing the horny squamous syphilitic eruption which, at this period of life, is very rare. Impetigo, especially facial impetigo, now and then occurs.

The erythematous form is common; children appear as if *scalded*, particularly wherever the parts are subjected to friction, or pressure. The anus, thighs and genital organs often become red and sensitive. This condition is then attributed by the nurse to teething, even before it is time for the teeth to appear; they are greatly in the habit of using, simply, powders which produce no effect. The physician is now consulted. Whatever may be the form of the syphilitic eruption, it has a great tendency to ulcerate; these ulcerations are most frequently observed over the sacrum, on the nates, and on the heels.

As I have already stated in speaking of the syphilitic bulla in the adult, M. P. Dubois has described a syphilitic pemphigus in the new-born child. It is generally acute, and the bullæ are as large as a pea, rarely as large as a small walnut. They are more or less numerous; more than a hundred have been counted on one child; they are then in close proximity, some of them being united at their base. They contain a yellowish, purulent fluid, which is sometimes fetid, and even mixed with blood. They may occur on all parts of the body. Most generally they are seen on the palms of the hands and the soles of the feet. The points of the skin on which the bullæ are raised, have a violet or blue tinge, which contrasts with the rosy hue of the other portions of the skin. Sometimes the dermis is eroded, ulcerated, and covered with a plastic membranous deposit. These ulcerations, occasionally, comprehend the whole thickness of the skin, and suppurate abundantly; their margins are sometimes elevated and rounded, and at different points they present the appearance of the last stages of ecthyma (P. Dubois). Sometimes we do not at first observe spots of the color mentioned; afterwards the epidermis becomes raised, and the pemphigus is complete. The bulla, once emptied, the spot is occasionally reproduced as before; there is a relapse.

Syphilitic pemphigus may occur in children who were born well developed; most generally, however, it is observed in those which are feeble, and prematurely born. In all cases, its appearance is ominous, as nearly all die who are born with it, or on whom it appears after birth. It is not unusual to find children which have died *in utero* bearing traces of this eruption. Pemphigus is especially grave when complicated with the affections of the lungs or thymus gland which I shall presently notice. In speaking of pemphigus in the adult, I have stated that the syphilitic nature of pemphigus in the new-born child has been called in question. M. Bouchut endeavors to establish a differential diagnosis between specific pemphigus and simple pemphigus. He observes:

* *Manuel des maladies vénériennes*, p. 440.

"On the one hand, we find the bullæ filled with well-formed yellowish pus, whilst in simple pemphigus they are filled by a clear or opaline serous fluid. In the one case, the color of the excoriated skin is red and livid; in the other, it is of a clear rosy hue. In the one the skin is eroded and even ulcerated; in simple pemphigus it is never ulcerated; in the one case the bullæ co-exist with syphilitic lesions in the other organs, such as eruptions on the skin or mucous membranes, with abscesses scattered through the substance of the thymus gland or lungs, with fibro-plastic degeneration of the liver, onyxis, &c. In simple pemphigus, on the contrary, the bullæ constitute the only symptom. In fine, the one is with difficulty cured, and only by mercury administered to both child and nurse, whilst the other is cured by simple diluents."*

I would remark that syphilitic pemphigus is not always accompanied with other syphilitic eruptions, and the visceral lesions mentioned by M. Bouchut are revealed only by an autopsy.

Besides the eruptions described and which belong to the superficial forms, we may also observe the deeper seated. Indeed, the child is sometimes affected with syphilitic ecthymatous pustules similar to those found on the extremities, especially the legs of the adult, pustules which are broad, deep, and the ulceration of which has perpendicular borders. The child may also present the tubercular form of eruption with an ulceration as if perforated. But it must be admitted these forms are rare.

[In Dr. Bulkley's elaborate paper *on Syphilis in Infants* (*New York Jour. of Med.,* Oct. 1840, p. 247), he alludes to the modified appearance of these eruptions and ulcerations as they appear in mulattoes and blacks, and relates some interesting cases, showing that in these they assume a whitish appearance. The dusky-colored spots on the skin were surrounded by whitish circles, "the color of the white being lighter, and that of the dark deeper, than the natural hue of the skin." In the article from which we quote, Dr. B. states that up to that time (1840), he had had under his immediate care 35 cases of infantile syphilis, and we have recently been assured by him, that he has now treated some 60 cases, probably a much larger number than has fallen to the share of any American practitioner. We regret that our limited space prevents us from noticing this contribution to the subject of Infantile syphilis more fully, but we can only refer the reader to the essay itself, assuring him that he will here find every point of interest and importance connected with it, most ably discussed.—G. C. B.]

In infantile syphilis we seldom find the bones or their appendages involved. Bertin quotes but the following case:

"Pierre G., æt. 35 days, removed from *la Maternité* to our department on the 1st Jan., 1809, was attacked with a very severe blennorrhagic ophthalmia, and tubercular pustules, over nearly the whole surface of the body, and a tumor the size of a pigeon's egg over the left great trochanter, and a very considerable periostitis on the superior and posterior surfaces of the ulna. The tumor

* Bouchut, *loc. cit.*

over the great trochanter continued to increase until the end of January; in February it began gradually to diminish, and towards the end of the month it had nearly disappeared. Wishing to watch the efforts of nature in this case, we prescribed no local application. We ordered mercurial frictions to the nurse every second day; and on the second of March no trace of the tumor remained. The periostitis in the fore-arm was more obstinate, and led me to apprehend even an alteration in the bone; the motions of the arm were very limited; the child appeared to suffer; the integuments became red; emollient cataplasms were applied, which subdued the inflammatory symptoms, but the tumor remained stationary, and the pustules disappearing but slowly, we administered during the month of March corrosive sublimate in doses of one-twelfth of a grain, which remedy was continued for three months. At the end of this time, the symptoms were all removed."*

M. Laborie has related another case of osseous disease, with caries. M. Bouchut remarks that he has seen many instances of lesion of bone belonging neither to caries nor to degeneration of the periosteum; it was characterized by a premature hardening of the long bones. In infants born before full term, or born dead, says M. Bouchut, instead of finding the bones soft, spongy, vascular, imperfectly developed and easily cut with the scalpel, I have seen the middle of the tibia and the femur solid, compact, eburnated, so as completely to resist the action of a cutting instrument. He states, that he attaches no importance to this modification in structure, which still possesses sufficient interest to be noted here; it seems to indicate in the osseous evolution a degree of abnormal and premature activity, on the part of the plastic secretions observed in several other organs. (Bouchut, *loc. cit.*) Very possibly these osseous lesions have no connection with syphilis.

Chancre is still more rare if indeed it has been at all observed in the child. Infantile syphilis, therefore, is limited to the secondary accidents, and to the ophthalmia that I shall presently describe. Some have established a connection between the form of the accident manifested in infantile syphilis and the stage of the disease present in the parents at the period of conception. Thus, according to this idea, parents affected with a precocious syphilitic eruption, will beget children with an erythematous eruption; at a more advanced period, as about the termination of the second stage of syphilis, the children begotten will suffer from the deeper seated syphilitic eruptions, such as the tuberculata; at a still later stage, they will produce only scrofulous children. Observation has not yet sanctioned this triple hypothesis.

I cannot conclude my remarks on the symptoms without noticing purulent ophthalmia in the new-born child. Certain it is that this serious affection of the eye may be independent of all venereal disease, that it may proceed from atmospheric influences, and unfortunate hygienic conditions. But there are cases in which this

* Bertin, *Traité de la maladie vénérienne chez les enfants nouveau-nés, les femmes enceintes, les nourrices.*

ophthalmia bears too strong a resemblance to that described as one of the accidents of blennorrhagia in the adult, to be here passed over in silence. Further, during my connection with the *Lourcine* (nurse department), I constantly observed this severe form of ophthalmia among them. Now it is well known that the majority of nurses at the *Lourcine* are subjects of the venereal disease.

The symptoms of this ophthalmia resemble those of the blennorrhagic ophthalmia already described; tumefaction, redness, discharge, pain, photophobia, all symptoms common to both. There are, however, some slight differences worthy of note. Thus, Wardrop has observed that the cornea itself is swollen, this membrane in children being of a very spongy nature, the palpebral conjunctiva is most tumefied and frequently forms a hernial tumor; the tarsal circle, therefore, strangulates this membrane, and we observe in the eye a phenomenon analogous to that seen on the penis in cases of paraphimosis. On separating the lids in the morning we sometimes witness an escape of fluid; so abundant is it, and so speedy its reproduction, that it forms a kind of jet whenever the child cries; this fluid never escapes entirely; a portion always remains on the globe which can be detached only by injections with an ear-syringe.

This ophthalmia generally appears about the third day after birth. At the commencement of the attack the child shuns the light; on separating the lids, the palpebral lining is observed to be preternaturally red; it has a villous appearance; and on it there is formed a thin layer of whitish matter. As the progress of this disease is sometimes insidious and very rapid, the closest attention should be given to the symptoms announcing the onset of so serious an affection, in order that it may be at once arrested. The terminations of this malady resemble those of the purulent ophthalmia in the adult; with the exception that death, which is very rare at the latter period, is in the child not an unusual result. The cornea is liable to be perforated by mortification and by ulceration; but staphyloma is the lesion most frequently observed.

Pathological Anatomy.—Under this head I include the lesions which have been observed only on the cadaver. As yet there are no particular symptoms by which, during life, they may be detected. M. P. Dubois has seen lesions of the thymus gland in several children born of parents who themselves presented evidences of constitutional syphilis. Scattered through the thymus he detected small foci of inflammation and suppuration. Examined under the microscope, as yet these have presented nothing unusual.

In the lungs have been found lobular nodosities, with a grayish plastic congestion and suppuration. These nodosities resemble those of lobular pneumonia previous to birth, in the fact that they often coincide with the existence of syphilitic pustules. Ollivier, Billard, MM. Cruveilhier and Husson have advanced nothing further in reference to the connection of these visceral lesions with syphilis. But M. Depaul has gone so far as to assert that these plastic nuclei were not the result of lobular pneumonia, but that it

is a particular lesion observed only in connection with other syphilitic phenomena in the child or parents; in that case, being a specific alteration produced by constitutional syphilis. The coincidence of these visceral with external syphilitic lesions in the child, or infection on the part of the parents, with M. Depaul is a sure criterion of their nature. He has defended this doctrine in an essay read before the Academy of Medicine. M. Caseaux, his reporter, objects to the conclusions of his colleague, believing that these alterations may result from inflammation not specific in its character, and may therefore be independent of the influence of syphilis. M. Caseaux here shows himself a decided anatomist. He requires a lesion to prove the nature of its first cause. M. Depaul would establish the fact by the preceding and concomitant circumstances of the case, &c.

M. P. Dubois comes with facts and the weight of his authority in support of the doctrine of M. Dupaul, who, however, has not far outstripped the actual state of the science. But, in the meantime, a practical question constantly arises, which cannot be eluded or postponed in the same manner as an academic question. I have stated that in such cases we must appeal to common sense, and treat the parents as syphilitic, the treatment being attended with no danger. In this manner we shall most generally prevent the birth of syphilitic children. (*Vid.* p. 347.)

We are indebted to M. Gubler for the knowledge we possess on the subject of hepatic affections in the new-born child. I insert in this place the substance of what he has published on these affections.

M. Gubler distinguishes a general and a partial affection of the liver. In the first case, and when the alteration is carried to its highest degree, the gland presents a yellow color, quite different from that of the liver in its normal state, and resembling that of certain flint-stones. The natural appearance of the substance of both lobes is completely lost, with the exception that on the uniform yellow base, by close attention, we may discover a patch more or less distinct of opaque white grains, having the aspect of hard grains of wheaten flour, together with delicate arborizations produced by the empty blood-vessels.

"The liver is sensibly hypertrophied, globular, turgid, hard, and with difficulty divided with the fingers, which tear it without leaving any impression on its surface. Such is its elasticity, that, if it be pressed strongly between the fingers, as if to crush it, a cuneiform portion from its margin escapes, like a cherry-stone, and rebounds on the floor; when cut, it grates beneath the knife like an encephaloid mass. The incisions made into this altered liver are very clean, homogenous, and, owing to its great consistence, very thin slices may be removed, possessed of a demi-transparence, which is found to a certain extent in the portions of the organ naturally thin, as at its margin, and especially the prolongation which terminates the left lobe.

"On pressing an incised portion of the liver, no blood escapes; but from the cut surfaces there oozes very abundantly a limpid,

slightly yellow-tinged serum, which escapes equally in the end though no pressure be made. In both cases, this tends to render the organ less turgid and more flaccid, by which we might be deceived if called upon to pronounce on the existence of the lesion. This serous fluid coagulates under the same circumstances as albuminous solutions, of which I satisfied myself in the following manner: having cut a portion of the liver into small pieces, I macerated the latter for some minutes in water, being careful to stir it; the clear liquid thus obtained, being afterwards exposed in a tube to the heat of an alcoholic lamp, became turgid at the moment of boiling, with flocculent layers having completely the aspect of coagulated albumen. The fragments, when in turn boiled, became hard, white, and opaque.

"In one case where, three days after death, I endeavored to detect the presence of the sugar of diabetes, as demonstrated in the healthy liver by M. C. Bernard, I did not succeed with the double tartrate of copper and potash. The absence of a normal product of secretion in an organ so profoundly altered, is not surprising. It may be objected to the experiment, that its negative results was owing to the length of time which had passed after death, and that the saccharine matter that had previously existed had consequently disappeared.

"Such are the principal characters of the syphilitic alteration of the liver when carried to an extreme, such as were observed in three of our cases. But this alteration may not always be so evident and so general; perhaps it most generally assumes other forms, which we will here consider. Among these, the most common is distinguished from the preceding by the degree of the lesion, which besides remains undetermined. Its characters, always much less decided, are sometimes so little developed, that until the present time, it has escaped the attention of those not prepared to meet with it, and in the future, it will doubtless often pass unnoticed, on which account it is the more necessary that we describe the means of detecting it. The liver, of smaller size than in the first variety, may not vary much from that which is natural; it is firm, without presenting the excessive hardness noticed in the other cases, and it retains in part the color which we have compared to that of silex. This yellow color is observed more particularly at its circumference, that is, in the superficial layer of the hepatic tissue, and consequently along its anterior border. The interior of the organ presents rather an indefinite color of a yellowish or brownish red tinge, more or less delicate. No portion of the parenchyma appears perfectly sound.

"At the same time, the liver possesses a certain demi-transparence, which permits us to distinguish, at a little depth, the grains like those of wheaten flour scattered through its substance. These opaque points are here much more numerous and firm, and this granulated appearance discovered on attentively examining the parts, seems to me to be one of the best indications of the pathological alteration, of which the liver is then the seat. Indeed, these opaque grains in the midst of the slightly translucid sub-

stance, reproduces to a certain extent the aspect of both substances which contribute to form the hepatic tissue; but besides the fact, these grains are separated by very wide intervals, the surrounding substance does not much resemble the essentially vascular weft of the areolar spaces of the sound tissue. Further, it must not be forgotten that the liver presents very different appearances in infancy and in later periods of life.

"This gland, excessively developed in proportion to the size of the child, preserves for some time a considerable relative volume, which afterwards gradually diminishes, so that it is actually smaller at the end of the first month than at the time of birth. Thus, in an infant at full term, which had indeed the liver of an abnormal volume, the transverse diameter of this organ, measured over the convexity of its superior surface, was six inches; the antero-posterior diameter of the right lobe four and one-third inches; that of the left lobe, three and two-third inches; whilst in an infant of one month, which appeared to me large when compared with the organ in subjects of that age, the transverse diameter, measured on its plane surface, was only four and two-third inches. The antero-posterior diameter of the left lobe scarcely equalled three inches, that of the right lobe slightly exceeding this number.

"At birth, the hepatic tissue in color resembles that of the spleen, and although its brownish-red color gradually loses its intensity, it still remains sufficiently deep during the early months of extra-uterine life to distinguish it from the yellowish hue belonging to the altered liver, which, on the contrary, more nearly resembles the natural color in the adult. As to the transparency, the reverse is true, for the liver of the adult is opaque, even in thin slices, whilst that of the very young child is evidently transparent under the same circumstances, thus diminishing the value of the character of the syphilitic alteration, if the latter be not generally accompanied with a transparency much more decided, together with a more or less yellowish tinge. This opacity of the liver in the adult, compared with that of the child, seems to me to depend upon two principal circumstances; first, on the predominance of the fibrous tissue, second, on the large proportion of fatty matters accumulated in the proper cells. The difference in the latter respect is still more striking.

"The granular aspect, and the appearance of the two substances which result, are wanting in the liver of the new-born child; but they exist in a decided manner at the period of life now under consideration, that is, towards the end of the second or third month from birth. Further, at this age, the healthy liver, when incised freely, discharges the blood with which it is filled, a circumstance which does not happen in the liver that has suffered the morbid alteration already described. The anatomical diagnosis of this alteration appears to us always possible when the circumstances mentioned are taken into consideration. It is well to be acquainted with a last cause of error, which I proceed to notice. When we press a portion of healthy liver between the fingers, at

the points where pressure is made, the blood contained in the capillary networks is expelled, thus causing the substance of the liver to assume its proper color, which, as all are aware, is of a more or less yellowish tinge. These yellowish or tawny spots may be mistaken for diseased portions in the midst of the normal tissue, if unacquainted with its true cause; but the hollow imprint left by the fingers or any other compressing substance, and particularly the absence of a certain transparency, together with the possibility of causing the blood to return again by pressure, are so many characters which may lead us to an accurate diagnosis."*

Causes.—The new-born child may be infected by the mother, father, or the nurse.

1st. *Influence of the Mother.*—Such are the intimate connections existing between the mother and the fœtus that the poison affecting the one must necessarily affect the other. We have only to consider the circulation of blood existing between the two, to be satisfied that the infection must be mutual. Therefore we here see the possibility of transmitting constitutional syphilis by the blood.

The mother may become infected before conception, or during pregnancy. In the first case the child is almost certain to become diseased. If the germ is not altered, the embryo, the fœtus becomes infected. In the second case, where the infection of the mother occurs after conception, it has been asked if that of the fœtus may take place at any period of pregnancy. To this we may reply, that the nearer the infection of the mother is to conception, the more reason will there be to apprehend that of the fœtus. But at what period of pregnancy may these apprehensions cease? This point is not yet determined. The infection of the fœtus after conception may result from the infidelity of the husband or the wife. When the husband is guilty there is less difficulty in ascertaining the period at which the mother and the child became infected, but when the infidelity has been on the part of the mother the difficulty is greatly increased, and if the woman lack sincerity, may be even insurmountable.

The question has been asked whether it be possible for the fœtus to become infected during any of the stages of syphilis with which the mother may be affected. It is probable that the infection will be more certain, more frequent during the more active stage of the disease, as, for example, when eruptions exist together with affections of the mucous membranes, and that these will be the lesions communicated to the child. However, I believe that we are not warranted in asserting that a woman affected with tertiary symptoms will not give birth to a syphilitic, but to a scrofulous child. It is certain that parents laboring under tertiary accidents have been known to beget perfectly healthy children, as well as those which were scrofulous, but it is equally certain that they have begotten those which were syphilitic. Parents with secondary symptoms have produced similar families of children, and unfortu-

* *Memoire sur une nouvelle affection du foie* (*Gazette Medicale du* 24 *Mai au* 5 *Juin*, 1851.

nately, those perfectly healthy have been known always to procreate scrofulous children, or those whose prospects for life were very doubtful.

2d. *Influence of the Father.*—The question of the transmissibility of syphilis by the father is involved in the mysteries of conception. This point is still shrouded in obscurity. Analogy, however, and even certain facts, give us some encouragement for its solution. Thus, it is evident that the father may exert a very decided influence on the features, form, and moral disposition of the child; he may also transmit to it his morbid dispositions, the germ of certain diseases with which the mother has never been affected. We may therefore suppose that syphilis may be transmitted by the father to the child, the mother remaining sound, thus implying an alteration of the sperm which vitiates the ovum. This supposition is corrobated by the most authentic facts; they may be found in the practice of all writers on syphilis, of all accoucheurs. M. Ricord himself has lately stated to the Academy of Medicine, that he has treated a woman, who in succession had two syphilitic children, although she and her lawful husband had never been diseased. The father alone of these children (the lover) was syphilitic.* Thus the sperm was here altered; it had vitiated the ovum only, the mother remaining in perfect health, as before conception.

The ovum may be vitiated by the father not only whilst certain syphilitic accidents are manifest, but even after their disappearance, at least while there is no external evidence of the existence of the diathesis. This fact is admitted by the most reliable practitioners. It is expressed in the following letter in terms which admit of no question. Like every intelligent person, M. Lallemand addresses himself to common sense. He thus writes to M. Baumés:

"I find that you have been rather too skeptical in reference to the virus, or at least, that you have announced your opinion with extreme caution. You have, it is true, very well shown the difficulties encountered in attempting to establish many facts; but there are still some, of which there can be no doubt; for example, when I see a father and a mother in whom no symptoms of syphilis can be discovered, (the father alone having previously had constitutional syphilis,) begetting four children, which die, having pustules and other symptoms of the disease; when I see the fifth child covered with similar pustules when three or four months old, and see this child infect two nurses; when I cure this child with baths of corrosive sublimate and a mercurial treatment; in fine, when after an anti-syphilitic treatment administered to the parents, I see four other children enjoy the most perfect health for more than ten years, how is it possible to deny that the virus existed in the sperm of the father, and that the poison has passed from the child to the nurse?"

The impression of the sperm upon the ovaries may be such, that not only will the first product be influenced by the sperm,

* Vid. report of the discussion on pemphigus of the new-born child (*Gazette medicale*, Sept. 20th, 1851.)

but still other products, and that too after copulation with different men. The following fact, recorded in several works on Syphilis, and which was observed during my connection with the *Lourcine*, will give my idea on the subject. It is that of a woman, whose first husband had an obstinate attack of constitutional syphilis; from this union she had one child, that died with the most evident signs of syphilis. This same woman, after the death of her husband, was married again to a perfectly sound man; she herself was healthy— that is, there were no external signs of disease—yet, four years after her first marriage, and after having had connection with her second husband, she was delivered of a child equally syphilitic with her first!

This case appeared to me inexplicable, unnatural, and I confess I should strongly have doubted it, had it not come under my own observation, but physiology has since taught me that it was in accordance with natural laws. I have learned, indeed, that certain females may bring forth children bearing a resemblance to the first male with whom they had connection, and this too, when they have long been separated from that male, and when they have become impregnated by another male. Indeed, in the work of Mr. Acton I read that a certain lord, residing in India, was desirous of obtaining a race of horses with a cross of the zebra. A mare was covered by a zebra. The result was a colt having very characteristic marks of the zebra, among others, the black circles on the legs and shoulders.

This mare was afterwards separated from the zebra and covered by horses; she was three times with foal, and each time the foal bore distinctive marks of the zebra, from which the mare had long been separated. Thus, by the act of the first fecundation, such had been the impression made on the mare, that not only the ovum impregnated by the zebra, but the three others by the horse, resulted in the production of zebras. We know, besides, how long a bitch of a good breed, impregnated at first by a dog not of the same blood, will for two or three successive litters bring forth a mongrel breed.*

The following case shows the prolonged influence of syphilitic infection on the part of the mother. It has been published in a pamphlet by M. Vassal. The case is that of a widow, C., who laboring under symptoms of syphilis, was subjected to a thorough treatment, under the influence of which she seemed to have recovered. Having married again, some time afterwards, she had in succession two children, both of which died with evident symptoms of syphilis. The second husband died soon afterwards from typhoid fever, *without having ever suffered from venereal disease.* C. married for the third time, and from this union she had twins, which died with evident marks of syphilis; she was delivered again of a fourth child, a male, which soon presented a *corona veneris*, but which soon became cured under the influence of a mercurial treatment. And yet, says M. Vassal, since her treatment,

* Vid. Acton, (*op. cit.* p. 412).

the woman C. has not ceased to enjoy good health; she has had no new symptom of venereal disease; has communicated nothing to the men with whom she has had connection, and yet she has infected every child which she has brought forth.

M. Cazenave, who has also reported this case, notes a circumstance which can leave no doubt as to the nature of the accidents under which these children labored, viz., the second child infected its nurse.

The most striking fact in this part of the etiology, is that of the transmissibility of syphilis to the germ by the semen, that is, by a product of secretion; a fact admitted by a partisan of the Hunterian school, which denies the syphilitic alteration of the products of secretion! Another important fact is the following, also admitted M. Ricord, viz.: the mother who escaped syphilitic infection after copulation with an individual laboring under the venereal diathesis, this same mother who remained sound after impregnation, may become infected from the fœtus, the germ of which has been contaminated by the semen of the same individual.*

Thus, by an interchange facilitated by the circulation existing between the mother and the fœtus, when the latter is syphilitic, it may communicate the disease to the mother, as may the mother to the fœtus, when she herself is infected. I beg the reader to ponder over this fact of the ovum contaminated by the father, the mother remaining at first sound, and afterwards to consider the fact of this mother who receives the infection from the child she carries *in utero*, which child likewise contaminates its nurse; I beg the reader to follow the virus in its course, and afterwards tell me if it is in accordance with these facts and their philosophy to assert that the virus, when once the primary accidents have been destroyed, is impotent when removed from the person infected; that when once admitted to the circulation it is no longer capable of being transmitted!

There is still another question. Both parents being sound, and having never suffered from syphilis before the mother became impregnated, when pregnancy once exists can the ovum become infected through the influence of the father alone, who may have contracted the disease during the pregnancy of the mother? This point has not yet been determined. The negative may reasonably be inferred, and it is supposed that for the contamination of the ovum, the mother must first become infected.

[Mr. Porter, in the Lecture from which we have already quoted, relates a case (*Dub. Med. Press*, Feb. 17, 1847, p. 100) which would seem to settle this question in the affirmative. The child was begotten three months before the father contracted the disease, the mother was sound, with the exception of some spots of button scurvy, yet the child, when born, was syphilitic.—G. C. B.]

3. *Influence of the nurse upon the child, and vice versâ, and upon those who have their earliest care.*—The new-born child may receive

* Vid. Acton, *op. cit.*

from the milk of its nurse poison instead of nourishment, and it is true it may infect the nurse. Indeed, nurses under the influence of the syphilitic diathesis, and yet having no external evidence of this diathesis, have communicated syphilis to sound children, born of sound parents. In these cases the milk has been the vehicle of the poison.

[Mr. Travers argues that as the natural secretions, "by a most happy economy," however they may deviate from a healthy standard, cannot be the vehicle of the syphilitic poison, so the milk of a syphilitic nurse cannot affect the child, (*Pathology of Ven. Affections*, Lond. 1830.) But it is clearly proved, as we have already shown, by abundant testimony, that contrary to the opinion of Mr. Travers, and the disciples of Hunter, the semen of the syphilitic male may infect his paramour; this law of Hunter as regards the natural secretions, can therefore no longer be maintained. Mr. Colles, (*op. cit.* p. 385,) observes, "I have never seen or heard of a single instance in which a syphilitic infant (although its mouth be ulcerated) suckled by its own mother, had produced ulceration of her breasts." Mr. Egan (*op. cit.* p. 317) remarks, that he can safely vouch for the accuracy of the above statement, and similar testimony is furnished by Mr. Acton, (*op. cit.* p. 419,) and Mr. Hennen, (*Military Surgery*, p. 558.)—G. C. B.]

It has been supposed, also, that children have infected their nurse by the saliva which they have deposited on the nipple during the act of suckling. Cases, however, tending to show this effect, it is well to add, are wanting in those details required to carry conviction to the mind. Yet they have analogy in their support; indeed, it is generally admitted, even by the most decided partisans of the Hunterian school, that syphilis may be communicated by the semen; now saliva and milk are products of secretion, and like the semen may therefore become the vehicle of the syphilitic poison. I repeat that it is very difficult to establish cases of infection by the milk and saliva, independently of all external evidences of the disease. It is still more difficult to decide in certain cases, when syphilitic symptoms appear, whether the nurse or nursling has communicated the poison.

As to the infection of the nurse by the child, presenting external evidences of the disease, nothing is better proved, and cases of the kind abound. Every physician of much practice, and every accoucher, especially those who devote especial attention to the diseases of children, are in the possession of facts proving this contagion. They may be found in the works of writers on syphilis who admit the transmissibility of the secondary accidents, and even of those who reject this doctrine. Thus Hunter has recorded several cases of the kind. The following is an analysis of the first. It is copied from the work of M. Bouchut, who declares himself a believer in contagion:

"A child was accused of having infected its nurse. The father had had gonorrhœa two years before his marriage, and fourteen years before the birth of the child. Both the first and second child were born healthy. The third died at the end of the fifth

month. The fourth was born at the seventh month, scarcely covered with epidermis, affected with dysentery, and died almost immediately. The fifth was born at the eighth month, of wretched appearance, and in the course of a few days, the surface of its body, and the interior of its mouth, were covered with vesicles filled with a clear pus; it died at the end of the third week; it had been confided to the care of a nurse. The latter, shortly after the death of the child, was affected with *ulcers on the nipple, swellings in the axillæ, very sore throat*, without ulceration, followed by *a cutaneous eruption*, with loss of the epidermis of the hands and fingers, and *onyxis*, with loss of the finger and toe-nails."

Hunter, says M. Bouchut, denies the existence of syphilis, both in the child and nurse. He attributes the ulceration of the fingers and the loss of the nails in the nurse, to the influence of mercury. But it is worthy of note, that Hunter, in denying the existence of syphilis, is not able to pronounce upon the nature of the disease. But whatever else it may be, in his estimation, it was not syphilis.

Here is another case from Hunter. It is taken from a corner where, says M. Bouchut, it is very difficult to find it; it is disguised under the title of *diseases resembling syphilis*. Hunter had all the failings of men bound down to systems, and who discard whatever perplexes them. A case is encountered which clashes with his theory, it is the case which is wrong, it is an aberration of nature, according to these masters of nosology.*

"A woman nursed two children, giving to her own the right, and the other the left breast; at the end of six weeks the left nipple ulcerated and was finally destroyed; the ulcer healed three months from the commencement of the accident. Then, the strange child became affected with shortness of breathing, aphthæ in the mouth, and died from consumption, its body being covered with ulcers. Soon afterwards the nurse was seized with lancinating pains in different parts of the body, and patches of eruption appeared on her arms and thighs, several of which became ulcers; she was subjected to a mercurial treatment.

"Three years afterwards she had a child, the epidermis of which was detached at several points, the body presented a squamous eruption, and which died at the end of nine weeks. It had been placed under the care of a nurse; the latter, shortly afterwards, had cephalalgia, pain in the throat, and ulcerations on her breasts; she entered a hospital, and although treated with mercury, she left uncured at the end of some months. The nasal and palatine bones exfoliated, and some months afterwards she died from consumption.

"The mother employed sea-bathing and the Lisbon *tisane*. The ulcers on her arms and thighs were cured in the course of a month. A year afterwards, she had another very feeble child, which died at the end of one month. Finally, ten months afterwards the

* I quote M. Bouchut here literally, to show that young and active members of the profession are opposed to the Hunterian doctrines, for it has been charged that such opposition is confined to those who are behind the age.

ulcers reappeared, suppurated for a year, and at length disappeared forever.

"What," says M. Bouchut, "was this disease that passed from the child to the breast of a woman, infected her system, produced lesions of the skin, and caused her to bring forth a child covered with ulcers, which child infected another nurse, whose breasts, pharynx, and bones become so deeply affected, that she perished? What was it, if it was not *syphilis* or a *syphaloid* disease, a term which Hunter has sought without being able to find; for, in speaking of this case, he thought that new poisons were daily formed strongly resembling the venereal poison; so that it was not from their points of resemblance, but dissemblance, that he formed his conclusions."*

As might be supposed, this case of Hunter's, so opposed to his doctrine, has found other commentators. Thus, M. Cazenave remarks in his journals; "if we examine the *ensemble* of phenomena in this case, we see a woman adopting a strange child to nurse, and giving it in particular its left breast. Now, it was the nipple of this breast that became the seat of the ulcerations which completely destroyed the part affected. These ulcers were accompanied with glandular enlargements in the axilla; and to abridge the first part of this history, the adopted child died with all the signs of advanced cachexia. Subsequently, this same woman brought forth a second child, and confided it to another nurse. The child died with a squamous eruption, which covered its whole body. As to the nurse, her breasts became ulcerated, she had cephalalgia, necrosis of the nasal and palatine bones, and died cachectic. Finally, to conclude this sad episode, the mother of these two children had a third, which also died at the end of a month, and she herself was cured only after many relapses, and a great variety of treatment. It is difficult not to recognize in this case a new proof of the possibility of the infection of the nurse by the child, and the indefinite transmissibility of syphilis in this manner. Likewise, with Babington, we cannot admit the merit of the negative argument drawn from the pretended non-contagion of secondary accidents. It is upon the latter point, however, that writers of the modern school of syphilis found their arguments for denying any kind of infection than that by an unequivocal and primary chancre.†

Babington, the judicious annotator of Hunter, admitting the communication of syphilis from the mother to the child, and from the latter to the nurse, comments, or, more properly speaking, combats the views of his countryman, and that, too, with a great number of cases proving this contagion. He mentions with much care the syphilitic phenomena observed in the new-born child, infected by its parents, and does not hesitate to admit that persons thrown into very intimate contact with a child affected with this disease, may thereby become affected. This contagion, in his

* Bouchut, *loc. cit.*

† *Annales de la syphilis et des maladies de la peau*, No. for August, 1851.

opinion, may thus take place to an indefinite extent. Babington believes (and this should be carefully noted), that it is at least very difficult to deny that cases like those cited by Hunter are not the effect of venereal poison, even in admitting that, in children, the symptoms of syphilis are not precisely the same in their progress and aspect as in the adult. He believes, in fine, that it is impossible to admit Hunter's argument, that secondary accidents are not contagious.

Finally, M. Ricord adds the following to the note of Babington:

"I coincide completely with the views expressed by Babington; only I believe that, as yet, we know not how to determine the absolute nature of the accidents which may be transmitted from the child to the nurse; and I believe also that the accidents reputed secondary and transmissible, may at first have been primitive; as likewise, in certain cases, the nurse who pretends to have been infected by the child, may have otherwise contracted the disease. However it may be, in the actual state of the science, if this explanation still leaves much to be desired to completely satisfy the mind, there exists a great number of incontestible cases of syphilis transmitted from the child to the nurse, and *vice versâ*."*

Of what consequence is it that the secondary accident of the child was at first primitive? So long as it is actually a secondary accident that is transmitted, the question is decided in favor of the contagionists. What if the nurse does sometimes unjustly accuse the child, when it is known that she actually does occasionally become infected from this source? Let us admit that these unfortunate nurses have occasionally suffered much both in reputation and interest from the doctrine laid down by Hunter. When they have presented only secondary accidents, they have been told that the primary had passed; when, from the previous history of the case, and a careful examination of the husband, it has been found that the latter was never affected with syphilis, then a lover has been imagined. All this certainly may be true, and I would not guarantee either the veracity or the morality of every nurse. But it is none the less true, that some of them have been carefully inspected before they took the child, and have been pronounced in perfect health, before it would be confided to them. Yet I have seen nurses which had been thus examined and declared sound, become covered with syphilitic pustules, which they justly attributed to the child, which had not been examined before quitting its parents. The following is an instance of this kind that cannot be questioned:

"M. P., several days after a suspicious connection, discovered a chancre on the prepuce. During the first stages of this chancre, it being yet undiscovered, he had intercourse with his wife, then seven months advanced in pregnancy, and communicated to her a similar chancre. I treated both with Van Swieten's liquor and sudorifics. The husband was cured in twenty-five days; the ulcer on his wife was also readily cured, but there followed coppery

* *Notes to Hunter*, 2d ed., p. 776.

papules on the forehead, and ulcers on the tonsils. In the meantime, she was delivered of a child, to all appearance very healthy; this child was placed under the care of a servant, who had been seduced and confined in a *maison de santé*. This nurse, *having first been carefully examined in the genital organs as elsewhere, presented no evidences of syphilis.* She was constantly watched, and went out only in company with the mother of the child. Eighteen days after the birth of the child, reddish, elevated spots appeared on the nates, chest, and cheeks; in the centre was a pustule; to the pustule succeeded a roundish, characteristic ulcer; in a word, they were true pustules of syphilitic ecthyma. For twelve or fifteen days the nurse presented nothing new; but then some ulcerations, with a grayish, irregular, cut out base, appeared around both nipples, a similar ulceration invading the commissure of the lips; around the anus were mucous tubercles, and there were furfuraceous coppery spots over different portions of the skin. Both were cured, in the course of forty-five days, by the syrup of Cusinier and Van Swieten's liquor, given to the nurse, and the application of the sublimate baths to both nurse and child. As to the mother of the child, she was cured by a continuation of the same treatment which was resumed after her confinement."*

Further, there is a comparison to be made which seems to me to settle the question of the transmissibility of secondary accidents from the child to the nurse. Even admit the existence of chancre in the infant, as is maintained by the disciples of Hunter, yet it must be acknowledged that it is very rare; so rare, indeed, that it would be difficult to assign to it its most frequent seat, and no separate description of it can be found. For my part, says M. Gibert, I have never seen primary symptoms in the new-born child.† Now, compare the extreme rarity of these symptoms with the frequency of infection of the nurse by the child, a frequency admitted even by my opponents, and it must be acknowledged that in this contagion, the so-called secondary syphilis plays the principal part, it is that which is most frequently communicated to the nurse.

In spite of these facts, and the admissions of the masters of the Hunterian school, which compel them to acknowledge, more or less completely, the contagion of secondary syphilis in the child, there are disciples of this school who even yet defend the system. Among these we may mention Mr. Acton, in England, and M. Cullerier, the son, in France, both of whom have written against this double contagion of secondary syphilis from the child to the nurse, and *vice versâ*. The latter has fully expressed his opinions in a memoir read before the Academy of Medicine, based on facts which have satisfied him that an infected child communicates nothing to its nurse, and that the latter, though fully saturated, transmits nothing to the child. But these facts of M. Cullerier, like those of Mr. Acton, have only a negative value; they avail

* *Baumés*, t. i., p. 169, *et suiv.*
† *Manuel des maladies vénériennes*, p. 317.

nothing against the affirmative facts, which are very numerous. They both pretend that, under certain circumstances, certain syphilitic accidents are not transmitted. Now, I doubt whether they find a single person to dispute this opinion. In like manner, should one assert that, under certain circumstances, certain chancres cannot be inoculated, surely no one would now contradict him. But this does not prove that the same accidents, under other circumstances, are not transmissible.

M. Cazenave, who is opposed to Hunter and his followers, mentions in his journal a very remarkable case, in which a sound nurse suckled for three months an infant likewise sound, afterwards she received another diseased child to nurse, and, from this date, 1st, the infection of the first child removed to its mother; 2d, the infection of this mother; 3d, that of a little sister; 4th, finally, the pregnant nurse becomes also diseased, and gives birth to a child equally infected.

"Now," observes M. Cazenave, "to this curious connection of facts, to this succession of the phenomena of infection, so rapidly following the one upon the other, can there be two explanations? If we adopt the doctrine of the absolute non-contagion of secondary accidents, we must accumulate hypothesis upon hypothesis, commencing with the supposition that the nurse might have been infected by a primary ulcer existing in the second child, of the existence of which ulcer we have no knowledge. If we take into consideration the great care with which the details of this curious history were collected, the repeated and persevering investigations to which the infected individuals were subjected, there remains but one reasonable explanation. The second child was the starting point, the first chain only remaining unknown, in the series of phenomena which commenced in the infection of the nurse and the daughter, O. The latter communicated the disease to her mother, who in turn gave it to an elder daughter; finally, the nurse gave birth to a child likewise diseased, even after she had submitted to treatment, which, it is true, was incomplete. One of the most important features in this curious case should especially be remarked, viz., the identity in the impression of the phenomena in the different individuals affected; thus, in none was there any trace of chancre, but always, and at all points, it was the mucous tubercle. Before dwelling upon this circumstance in detail, I cannot refrain from remarking that it is, in this respect, that the case differs from that of Hunter, both of which, it is true, lead to the possibility of the same fact, viz., contagion, but under very different circumstances, in virtue of which contagion is necessarily more constant in one than in the other, and we shall hereafter see that the explanation of the phenomena detailed in our case does not conflict so much with the opinion of our opponents, if the latter were not so fatally bound by *their primitive syphilis.*

"Finally, we have also been struck with the kind of regularity in the period of incubation. Thus, in the nurse, the syphilitic symptoms became developed nearly in the same time as in the first

child, O.; and in the latter, the period of incubation was much about the same as that of the elder child."*

M. Cullerier, the nephew, the worthy practitioner whom I succeeded at the *Hôpital du Midi*, was a contagionist. He has published as follows:

"But if we mark the feeble power of contagion, possessed by the consecutive accidents of syphilis, we do not pretend that they are never communicated by contact. Well-authenticated facts show, on the contrary, that certain of them may be thus transmitted, and it cannot be absolutely affirmed that this observation does not apply to others.

"A genteel married woman presented herself at the venereal hospital, having a child ten months old, and gave the following statement: I have never had the venereal disease, and my husband is perfectly healthy; ten months since I gave birth to this child, which was strong and healthy. I took a strange child to nurse; it was extremely emaciated, and its body was covered with an eruption such as you now see. Having no suspicion of the nature of the disease, I nursed that child together with my own; they frequently slept together, and wore each other's garments. I soon discovered that my child was affected with a similar eruption to that on the foster child; and, although the mouth of the latter was free from sores, yet large scabs appeared upon my breast, back, and chest, some of which are still to be seen. The foster child soon afterwards died, and it was not until my child had become greatly emaciated, that a physician who was consulted, declared that both of us had venereal disease.

"The child was indeed in a deplorable condition, its whole body being covered with a pustular eruption; the mother was similarly affected, leaving therefore no doubt as to the nature of the disease: the nipple had never been ulcerated."

Here, then, we have the case of a child communicating syphilis to its nurse and to another child. In the following instance we see the disease still more widely disseminated.

"Here is another case," says the same writer, "equally in favor of the contagion of consecutive accidents. A woman was admitted to the hospital, with two children, one aged seven, the other eleven years. The following was her story: I reside in the country, ten leagues from Paris. I have four children, all of which together with their father and myself, have always enjoyed excellent health, Eight months since, I took a foundling child to nurse, two years of age; it was a wretched-looking child, and had pimples on its body and sore throat. We permitted it to take soup with the same spoon as ourselves, and to drink from the same glass. Soon one of my girls complained of a severe sore throat; this increased, and she died in about six weeks; the foundling also died; soon after this I began to suffer from an affection of the throat, as did these two children; their father suffered nothing, and to this day is perfectly well. A physician was called, and suspecting the ex-

* *Annales des maladies de la peau et de la syphilis*, loc. cit.

istence of venereal disease, ordered frictions of mercurial ointment; but the affection of the throat did not diminish, and I determined to enter a hospital.

"These three patients all had an ulceration of the posterior wall of the pharynx, supposed to be of syphilitic origin. After a mercurial treatment of some months, they left cured; but the eldest child soon returned; having a pustular eruption over the whole body, and was at last cured by fumigations with cinnabar."

These cases and opinions on the transmissibility of secondary accidents may be found in the work of M. Lucas Championniére, a work written, so to speak, under the supervision of Cullerier, the nephew.*

Analogous cases, I repeat, have likewise been observed by almost every practitioner of much experience. I possess several which are most curious. The most remarkable, in my opinion, is that of a little girl in whom mucous tubercles existed in the mouth; she contracted them from a nursling which her mother had taken. This little girl was placed in one of the weaning houses in the environs of Paris, where it was almost entirely neglected, more attention being bestowed on others in consideration of the remuneration given. In this weaning establishment there was but one tin cup for six little girls. I know not whether she was the intermediate one, but four of these children who were previously sound, became affected with mucous tubercles in the mouth, and on the genital organs, one month after the arrival of the new boarder, of the syphilitic nature of whose affection I had satisfied myself previous to her departure for the country.

Diagnosis.—The diagnosis of infantile diseases is attended with great difficulties. The elements required, indeed, exist not only in the child, but in the mother, father and nurse. Syphilitic eruptions in the child strongly resemble those in the adult. But there are some which are analogous to other eruptions not syphilitic. Thus, M. Trousseau is of opinion that the yellow tint is more common to the eruptions in the child than the coppery hue. Those who have followed the discussions on pemphigus in the new-born child can appreciate the difficulties in deciding upon the nature of that which is syphilitic. Some writers believe, that in the present state of science, this diagnosis is impossible. This, however, I have attempted to establish in describing this form of eruption in the child. According to M. Trousseau, there is one symptom or accident of great value in forming the diagnosis of a syphilitic disease in the child; that is, the chaps or fissures on the hands and feet. This symptom is seldom wanting, but unfortunately it does not always exist.

Certain affections of the mouth, as aphthæ, or thrush, may impose upon us for a syphilitic affection, especially if accompanied with a cutaneous eruption. This mistake is the more liable to be

* This work, indeed, is prefaced with a letter from Cullerier, which thus commences: "The work which you are about to issue is the faithful expression of my opinions on the nature and treatment of syphilis."

committed, as certain cases of aphthæ, not syphilitic, are contagious. The eruption must, therefore, be examined with the greatest care, the parents should also be questioned and examined, so that erroneous conclusions may be avoided, which might lead to the adoption of a mercurial treatment, a practice in some cases not unattended with danger. When the symptoms presented by the child are doubtful, we should then look to the suspicious source of the malady in the parents; both father and mother should be questioned and examined. But the symptoms in the mother may not always be evidently syphilitic, but obscure; still further, she may be free from all symptoms, and in fact may never have been infected. If the accidents on the father have long been healed, and have disappeared, the practitioner may be left in the same perplexity. He may have an interest in concealing the truth, and may deny ever having had the disease. Finally, a third person may be the guilty party, the legal father and mother being both perfectly sound, and the infection of the child may be due to this third person, whom it is difficult to discover.

It is evident, therefore, in what obscurity the questions connected with infantile syphilis are involved. And yet the physician may be daily called upon to answer them, in behalf of the parents, or of justice!

I certainly do not condemn the conduct of those who require the elements necessary to conviction, and I myself strongly suspect the veracity and morality of persons, when it is for their interest to deceive. Yet, it must be acknowledged, that in certain cases, inquiries instituted by men placed in favorable situations for the purpose, may furnish results far more important for producing conviction, than qualified scientific data afforded by a single symptom only. Thus, there are reputable country practitioners so well acquainted with all that passes in their district, and who know so well the standing of their families, that their testimony should have the greatest weight in an affair of damages in which a nurse may be concerned, especially if their only opponents are writers on syphilis, who have been long wedded to a system now known to be false. Judicial tribunals begin to understand the too great facility with which nurses may be accused. Thus, the tribunal of Meaux recently gave two hundred francs damages to a nurse infected by her nursling, because two trusty practitioners of the county testified to the fact that the family of the nurse had received the poison from the foster child, and this judgment was rendered in spite of a certificate from M. Ricord denying the possibility of such infection.*

Prognosis.—The prognosis in infantile syphilis is generally grave, for a being tainted with this poison at birth, is one whose existence is seriously compromised. But if, aside from the syphilis, the child at birth is strong, and as the saying is, lively, if it is treated early, the prognosis is more favorable, for a cure is then not unfrequently obtained; I repeat, if the child be treated early;

* Vid. *Gazette des Hôpitaux*, 1851, and the work of M. Bouchut, p. 894.

and I will add, well treated. I should here observe, that the *vis medicatrix naturæ* in these cases is less powerful than in the adult. In the latter, it is not unusual to witness instances of cure which are entirely due to this power. Such, however, is not the case with the child; a cure in the case of the latter without treatment is exceedingly rare. When the child at birth presents a miserable appearance, and the mother is diseased and feeble, and when both hygiene and treatment have been neglected from the first, the prognosis should be very guarded. These are the causes of the frightful mortality among children born with syphilis.

M. Acton has remarked, in a mortality of three hundred and three children from this source, that the most fatal period was during the first ten months of life. Frequently, if this period be passed, they gradually waste away and perish before the end of the year. If, by the efforts of nature, by well-directed treatment, good hygiene, the infant fortunately reaches the first aniversary of its birth, it will have many chances of being raised.

Treatment.—In speaking of the treatment of the new-born child, I cannot refrain from premising a few observations in reference to that of the parents, for the latter is sometimes the prophylaxis of the child. During my connection with the *Lourcine*, and my charge of the nurse department in that hospital, many of them were pregnant, and these I treated precisely in the same manner as those who were not. In cases of primitive accidents, I administered the bi-chloride of mercury, according to the formula of Dupuytren; in the consecutive accidents, I gave the iodide of mercury, and this too in the same doses as to all my patients. I never observed that abortions were more common in women thus treated than in those who refused to take it from fear of producing such a result. On the contrary, I am convinced, that when properly treated with mercury in the early period of their pregnancy, they miscarry less frequently, that their offspring will be less deeply infected, and that, in some cases, they will be free from syphilis. Thus, I believe that pregnant women should be treated with mercury as early as possible; it is even a means of preventing abortion, an accident especially provoked by the diseased state or death of the fœtus. Now, the sooner the mother is rid of her syphilitic infection the greater are the chances that the infant will escape, and consequently that pregnancy will continue until full term.

[Mr. Langston Parker (*op. cit.* pp. 192, 193) has some very judicious remarks on the treatment of syphilitic pregnant women: "The result of modern experience shows that a pregnant female constitutionally diseased may be treated with safety, and with a strong probability of cure both to herself and the eradication and prevention of disease in the fœtus in utero. It is not prudent to commence the full treatment of a pregnant female during the ninth month of her pregnancy. At this period a palliative treatment only should be adopted; if a mercurial one, it should consist in alterative doses of this drug merely, and frictions with small quantities of mercurial ointment every two or three days, leaving the full treatment to be commenced a month after delivery." Mr.

Acton advises (*op. cit.* p. 429) that the female, under these circumstances, should be treated exactly as if she were in an unimpregnated state. "Observations on a large scale," he observes, "have taught me that the fears of the surgeon who dreads to give the pregnant woman mercury, are chimerical." Drs. Beatty, Evory, Kennedy, and Egan, maintain that "abortion may be prevented, and a healthy child insured, by a judicious mercurial treatment during pregnancy." (Egan, *op. cit.* p. 291.)—G. C. B.]

The father should be treated precisely in the same manner, that is, in accordance with the principles of therapeutics which I have laid down. The question on which writers on syphilis are divided, is, whether in the absence of all evidences of the disease, the father should be subjected to treatment simply because the mother may have miscarried. It is necessary to distinguish here, if the father has really had syphilis, if the fœtus bears marks of this diathesis, there should be no hesitation in submitting the father to treatment; for we know that the disease may remain for a long time latent, as is proved by the relapses after long intervals. Indeed, between the two manifestations of the disease, we see persons enjoying the best of health, and bearing on their body no traces of the diathesis; but the latter does not the less exist; it will probably reappear at a later period on the same individual, his child or his wife. We should be guarded when the father assures us that he has never been syphilitic, except when we know that he has some particular object in deceiving us. In such a case, the shrewdness of the physician, and the confidence which he knows how to inspire in the mind of the father, may be of great service to the family.

When a child is born of syphilitic parents, should the father be treated? No, if there are no marks upon him of the disease; for it has been proved that venereal parents have begotten healthy children, which have been raised, without even showing the least symptom of syphilis. But children of such an origin should be carefully watched, in order that they may be properly treated upon the very first manifestations of the disease. They should not suckle their mother, for, whatever may be the opinions entertained as to the alteration of the milk, it is acknowledged that it is better that they should be nourished by a woman free from the disease. Indeed, if the mother's milk is not syphilitic, if it is impossible for it to infect the child (which is not established), it may suffer some other change, from the contamination of the system, so as to afford imperfect nourishment to the child, or favor the development of a diathesis, the germ of which might have been destroyed by a more healthy aliment. There are mothers, who, from economy or uneasiness of their child, use the sucking bottle instead of committing it to the care of a nurse. This, especially in cities, is bad practice. Children, I repeat, of such an origin, should be carefully watched, and placed in the best possible hygienic conditions. Now, as alimentation is here the basis of hygiene, a good nurse should be selected for the child. Should the child be born with symptoms of syphilis, or if these symptoms appear shortly after birth, it must be subjected to treatment, for, as I have already stated, if we do

see adults become rid of unquestionable symptoms of constitutional syphilis, without any specific treatment, it is not the case with children of a tender age. Under the influence of hygienic care, the symptoms may completely disappear; but they are certain repeatedly to return, after longer or shorter intervals, and with more or less intensity until a fatal termination, which is then sure to be the result. In my opinion, mercury is our proper remedy, and it should be administered directly. I find that in this view of the subject, M. Cullerier, the son, coincides. This practitioner has published an article in the *Bulletin Therapeutique*, from which I have profited. But as this mode of administration is not adopted by all practitioners, let us discuss the advantages of the direct and the indirect employment of the remedy.

The indirect treatment, or that through the medium of the nurse, has been recommended by many writers on syphilis, or accoucheurs, who, fearing the effects of mercury on constitutions so feeble and delicate as those of infants at the breast, and exaggerating the gravity of the possible accidents, believe that they can avoid these effects by medicating the milk of the nurse, which is thus made to serve, at the same time, for nourishment and medicine; those who are afraid of the action of mercury on the mother or the nurse who present no symptoms requiring its use, cause it to be given to goats and asses, on the milk of which the child is fed. Astruc, Fabre, Burton, Rosen, Faguier, Doublet, and Levret, declare themselves the advocates of this method of treatment.

"Seeing," says M. Cullerier, "such great confidence in the indirect treatment, it is very natural to conclude that it is not the result of reasoning alone, but that it is based on researches showing the presence of mercury in the milk of the females or animals to which it has been given. This, however, is not true, and the theory of the passage of the mercury into the milk has long been regarded as merely an hypothesis, for a truly serious chemical analysis has never been made. Many absurd notions have indeed been admitted in reference to the action of mercury on the system, and if it were possible to believe in its presence in different parts of the system, or in the secretions, we might, without proof, admit of it in the milk. But let us glance at the authors who have reported cases of the kind, and see with what confidence they inspire us. Thus, Petronius speaks of a syphilitic patient treated by mercurial frictions, in whose urine numberless globules of mercury were seen to float; Mussa-Brassavole having seen a patient on whose arms and thighs mercurial frictions had been made, attacked with vomiting, was astonished at the weight of the matter rejected, and, looking in the vessel with the expectation of finding a collection of thick phlegm, saw nothing but a large quantity of mercury which had been vomited; Gabriel Fallope, who asserted that mercury is found in quantities in the saliva of patients affected with mercurial ptyalism, and declares that the way to arrest salivation is to hold a gold ring in the mouth, to draw off the mercury. Assertions still more serious have been made, and authors of some renown, as, for example, Teller and Buchener, declare that they

have detected the metal in the bile, blood, saliva, and urine of venereal patients who had been treated with mercury; but these assertions have been refuted by chemists of equal celebrity. In our own day, indeed, we find that M. Colson, in a well-written memoir, published in the *Archives de Médécine*, for 1826, assuring us that he has detected the presence of mercury in the blood of individuals who had taken it, whilst, on the other hand, an equally conscientious and skilful observer, M. Devergie, after various attempts, could not succeed in detecting it." (*Med. lég.*)

The question here rested, and chemical analysis had as yet detected nothing in the milk, when M. Peligot commenced his researches on the subject. In the *Journal des connaissances medico-chirurgicales*, for November, 1836, he published a memoir on the chemical composition of the ass's milk, and in a passage where he is treating of the mercurialization of this milk, he remarks: "I have made numerous essays for the purpose of detecting the presence of mercury at first in the milk of an ass which had taken five grains of corrosive sublimate daily, and afterwards in the milk of the goat to which twelve grains were given daily, without any unpleasant results. Notwithstanding the utmost care, and the variety of methods employed, I could not detect the presence of the mercury. It cannot, however, be positively affirmed that it may not be found in the milk of these animals; for the best proceedings for detecting small quantities leave much to be desired."

M. Cullerier also made experiments, and took the most favorable position for detecting the presence of mercury in the milk of the female, and of goats to which he administered this metal. He was aided by druggists, and chemists, MM. Lutz, Reveil, Personne. He did not succeed, notwithstanding the utmost perseverance, in discovering but infinitesimal quantities of mercury, after analyses made in the best manner possible.

After these experiments, need we be astonished at the want of success, and the fickleness of authors, who, at one time have condemned the direct treatment, preferring that of the nurse, and who have subsequently returned to the former method. Thus, Faguier and Doublet, who at first greatly lauded the indirect treatment, afterwards retracted their praises, and without hesitation administered mercury to infants. It should be stated that these physicians were at the head of a hospital established for the express purpose of carrying out the indirect method of treatment. It was the Vaugirard, opened in 1780. At this period, there was a diversity of opinion in reference to the best mode of treating children at the breast, and no doubt was entertained as to the transmissibility of secondary accidents from the nursling to the nurse. In this hospital were admitted only nurses who were infected or pregnant women equally syphilitic who were near their *accouchement;* these women, therefore, could suckle strange children affected with the disease, without risk, and could supply them with milk medicated by means of the treatment which they themselves were obliged to undergo.

Bertin, who had charge of the department allotted to nurses in

the *Hôpital des Capucins*, was for a long time inclined to the indirect method of treatment; but it is evident that his confidence sometimes wavered, and he even acknowledges that, under this mode, the symptoms were only mitigated or made to disappear, with a certainty of reappearing. He goes so far as to express his regret that he had not more frequently resorted to the direct treatment, for he had had reason to approve it. As if completely to contradict theories in favor of the indirect treatment, some writers still recommend this method, at the same time that mercury is administered to the child, as though such a compromise, says M. Cullerier, were not sufficient to settle the value of this indirect method.

As to the treatment with the mercurialized milk of asses or of goats, which might be supposed to be more efficacious on account of the larger quantity of mercury thus administered at once to these animals, the researches of M. Pelligot and of M. Reveil, by which no traces of it could be detected, are certainly well calculated to dissipate such a fallacy (Cullerier).

For my own part, I have never doubted the passage of a small quantity of mercury into the milk, both of the goat and of the nurse. But my reason for rejecting the indirect treatment is the impossibility of regulating the quantity, or of giving sufficient doses. Now, in young infants, the progress of syphilis is very rapid. We see children born of syphilitic mothers, having the appearance of the most perfect health, in the course of four or six weeks they are attacked with characteristic symptoms, which, in a few days, assume a very serious aspect, and, if the disease be neglected, soon terminate fatally. What confidence, in such cases, could we repose in the indirect treatment, when the milk of the nurse contains so insignificant a proportion of mercury, and even that only some days after its administration. I repeat, the progress of the disease is very rapid. The treatment, therefore, must be energetic. The best method is to give the mercury to the child itself, without any apprehension on account of its enfeebled state.

It may be objected, says M. Cullerier, that the digestive organs of these little beings are likely to suffer from the preparations of mercury, so that their doses cannot be increased. But then, instead of giving it internally, it should be administered according to the endermic method, by frictions and by baths. Mercury, taken internally, has rendered great services; it has been recommended by practitioners too reputable, and is still thus administered by those of too high standing, not to inspire confidence in the results they profess to have obtained; but surely this method can be indicated only in cases in which the progress of the malady is less rapid than usual, and when the constitution is not yet become too far undermined, or when, indeed, the disease, having been arrested by the endermic method, there is some obstacle to its continuance, the further administration of mercury being still indispensable. Corrosive sublimate is the preparation generally employed, and it may be given in milk, syrup, or honey, in the dose of a sixteenth, a twentieth, or the twenty-fourth of a grain.

In the second division of this work, I have already shown how feeble is the action of mercury on the mouths of children, either when administered internally, or applied to the skin; but the chief risk to be apprehended from its internal use, is its deleterious effect upon the stomach and intestinal canal. Children have been seen to be attacked with very obstinate vomiting after slight doses, and what, according to M. Cullerier, is the predominant affection, is enteritis, which destroys most of those thus treated.

The following is the endermic method of employing mercury:

The infant should be bathed several times with water, for the purpose of allaying any excitement that may exist, and to render the skin more favorable to absorption; fifteen grains of the Neapolitain ointment is to be rubbed on the sides of the chest, towards the axilla, the application to be made on one side to-day, and on the opposite to-morrow. These frictions should be gentle, so as not to irritate the skin; and they should be prolonged for several minutes. Twice a week they should be suspended, during which the child should take a hot-water bath, to which from half a drachm to a drachm of corrosive sublimate has been added.

In children from two months to one year of age, the above treatment is generally sufficient, though it may be necessary to increase the quantity of the mercurial ointment or the corrosive sublimate; but when they have passed this age, the ointment may without inconvenience be increased to half a drachm, and that of the sublimate in the bath to one and a half drachms.

M. Cullerier has but one objection to these baths, and this is a proof of their efficacy, viz., that when daily employed they cause the symptoms to disappear *too rapidly*, and that, both in hospital and in city practice, the parents seeing no longer any evidence of disease, are too ready to believe that the cure is perfect, and they discontinue all treatment, in spite of the instructions they may receive. Well, what then happens? Why, that in trying to remove the symptoms in too great haste, the specific principle is not destroyed, and we have relapses of a malady, of which, as it were, we have only skimmed over the surface.

It is very rare that frictions with the mercurial preparations above mentioned, give rise to erythema or a vesicular eruption; besides, it is obvious that in making them on the sides of the chest, we act on a broad surface, and thus avoid the irritation likely to be produced when made on the legs or thighs, with which urine or fecal matters may come in contact.

When there are mucous tubercles, or ulcerations secretions copiously on the genital organs, or about the anus, (a circumstance not unfrequent,) it is well to touch them occasionally with a solution of nitrate of silver, of the strength of one and one-half or two drachms to eight ounces of water. If the discharge is moderate, or the tubercles are dry, lotions with bran, marsh mallow, or elder water, will suffice; we may sprinkle the surface with starch, farina, or lycopodium, (club-moss,) and isolate them as much as possible with dry lint, or charpie.

When the face is attacked, and facial syphilitic impetigo is com-

mon, the same lotions should be employed. The parts being now exposed to the air, desiccation is rapid, causing very fine chaps and fissures, which are very painful when the child cries or nurses, on which account we should cover them as frequently as possible with some greasy substance, cucumber ointment, simple cerate, or cerate containing opium or calomel.

M. Cullerier thus concludes:

"The indirect treatment, or that through the medium of the nurse, is insufficient, in consequence of the small portion of mercury contained in the milk, it is dangerous from the loss of precious time in a disease of rapid progress, and which may speedily terminate fatally.

"The direct treatment only is effectual; it may consist in the internal administration of mercury, of frictions, with Neapolitain ointment, or corrosive sublimate, baths, means best suited to the condition of the digestive organs."

Since I have described the symptoms of purulent ophthalmia, it is proper that I should here allude to its treatment. This does not differ from that of the same affection in the adult; that is, we must act directly on the parts, by the most energetic means, such as the nitrate of silver in substance. Before resorting to this powerful treatment, a great variety of more moderate measures have been adopted, many of which have been attended with success, thus showing that there are ophthalmic affections which are not of a very serious nature.

As before stated, the nitrate of silver is still the sovereign remedy, if we really possess a remedy entitled to this name, in the treatment of a malady which is occasionally of a very grave character, and which terminates in the destruction of the organ. The cases reported to the Medical Society of Dublin by Drs. Kennedy and Ireland, tend to inspire us with still greater confidence in this remedy. These cases are very numerous, and show that this ophthalmia is always cured in two or three days, by the following collyrium, applied three or four times in the day:

℞. Nit. Argent. ʒ iii.
Aq. Ros. ℥ viii.

Antiphlogistics may be employed at the same time: thus there are cases where the active nature of the congestion, and the strength of the child, require the application of leeches. Sometimes one will suffice; if applied to the upper lid, at a point where the vessels are much congested, it will discharge blood copiously.

Hygienic measures should not be neglected, cleanliness being, in these cases, absolutely essential. We should frequently inject water between the lids, for there is nothing more irritating than the matter secreted by an inflamed mucous membrane; the contact of this fluid with the cornea, is one of the most common causes of its disorganization. I am convinced, that if we can interpose and maintain, without inconvenience, some soft substance between the globe and the eyelids, we may prevent, in many cases, the destruc-

tion of the eye. Thus a child affected with this disease should be frequently visited for the purpose of removing this matter which tends to adhere to the globe of the eye; occasionally a hernia forms in consequence of the tumefaction of the exuberant mucous membrane, and the wound is cauterized; at first it produces severe pain, as manifested by the cries of the infant, but it finally subsides, and the inflammation disappears soon after the reduction of this hernial projection.

PART FOURTH.

PROPHYLAXIS OF VENEREAL DISEASES.

I DO not think that, at the present day, an author is justified, in a moral point of view, in teaching the methods of preventing the contagion of the venereal disease. On the contrary, he should beg the indulgence of the reader for the precepts which, under this head, he may inculcate. What, indeed, does he propose? To instruct the reader in the means of preventing infection. Now, if we sum up the whole of our science, disinterestedly, there is but one advice to give, and that is to avoid the source of the poison. It is evident that this advice cannot always be followed. We must therefore seek other counsel, less certain, but more easy to be observed, and with this view a private and a public prophylaxis have been instituted.

As to the prophylaxis, in general, it may be said that folly, wisdom benevolence, and charlatanism have vied with each other in the effort. Some measures may be found which it would be prudent to follow; others, again, are absurd and useless, or even hazardous. I shall notice only those which possess some utility; some there are to which I will merely allude, whilst others will be passed in silence, for I am not writing a satire.

CHAPTER I.

PRIVATE PROPHYLAXIS.

Two persons are here concerned; one fearing to communicate the disease, or distrusting himself; the other is exposed to infection and would prevent it.

In the first case, that is, to place such person in circumstances least favorable to contagion, he should observe the utmost cleanliness. All the parts should be most carefully washed. Here, the chlorides, soaps, in fine every measure capable of acting chemically or physically in altering or removing the morbid secretions, should be employed. The parts should be scraped (*décaper*), to use an expression now in vogue in speaking of syphilitic prophylaxis.

In the second case, that is, when a person is about to expose himself to risk, precautions should vary, before and after the consummation of the act.

Before the act, the parts should be minutely examined to ascertain whether there is any solution of continuity. The least fissure surprisingly promotes contagion. Previous to coition repeated lotions with soap are injurious, as they deprive the parts of the protection of the smegma and mucosities, and render them completely naked, thus placing them in a condition most favorable to contagion. Those practitioners who disapprove of these lotions before the act, do not regard in the same light those made some time previously with solutions of alum, acetate of lead, and particularly with aromatic wine alone or combined with tannin. These astringents are preferable to fatty substances alone, such as tallow and lard, which still enjoy much reputation with those who are much exposed to the chancres of infection. An intermediate substance, still more efficacious, is the condom already mentioned in speaking of blennorrhagia; it is a small sack made of gold beater's skin or the cæcum of certain animals, in which the penis is enclosed. It should be well washed, new, and perfectly sound. The condom, however, leaves the root of the penis, scrotum, genito-crural fold, and pubes, exposed, and the pus of a chancre may reach, and inoculate these parts; but it prevents, to a certain extent, blennorrhagia, and affections of the glans produced by its contact with the neck of the uterus, which, in my opinion, is the most frequent point of infection in females. The condom, therefore, is one of the best measures of prevention; but its cost, and the calmness of mind required for its application, are frequent causes of its neglect.

Directions have likewise been given as to the conduct during coition. Thus it is recommended that the act be not prolonged, that it be hastened, useless advices in many cases, for it is not always easy to prolong, and still less, to accelerate the act. Ejaculation has also been advised, under the idea, that the sudden and rapid passage of the semen may carry off the contagious matter. Such advice, especially that respecting the rapidity of the act and the ejaculation of the semen, has been given by practitioners, and this too without the least idea of the difficulty, in the way of complying with such directions.

The precautions after coition should be prompt and thorough. It has been advised that the person should void his urine. True, when the bladder contains urine, and it is possible to pass it, it is a good practice, for in passing through the canal, it may remove the infectious matter from the urethra. Those who have phimosis, may close the orifice with two fingers, and fill the preputial cavity with urine, which as it leaves the urethra washes the mucous lining of the glans and its envelope. But what is of most importance, is the application of lotions, to which in the case of a female should be added vaginal injections. These lotions should be made to reach every part of the mucous membrane; every fold should be inspected, nothing should be overlooked. Circumstances may

occur in which it is difficult to carry out the measures here recommended; thus the necessity of retreating after the act, a false pride, the fear of wounding the feelings of the person with whom they have had connection, too great confidence, or a state of intoxication, may all cause them to be omitted. If one is so fortunate as to be able to put the above plan into execution, there is a strong probability that contagion will be prevented. The proof of what I have here asserted, is the immunity enjoyed by prostitutes, who have already paid the penalty of their neglect by syphilitic infection. It does not always depend, as M. de Castelneau has always supposed, on a kind of syphilitic saturation; but is most frequently the result of the precautions which these women take both before and after coition, and the applications of which they make such frequent use. This is one of the reasons why we do not find these women returning to special hospitals. There is also another, and of that I speak in another place; there are females who though registered, find *the means* of treating themselves, or of being treated in houses of prostitution.

Acids mixed with water were long since recommended as excellent lotions. Thus, Lanfranc, in 1290, advised that the penis should be washed with vinegar and water. The passage which I quote from this author is remarkable not only in a hygienic but in an historical point of view, for it has been regarded as a proof of the ancient existence of syphilis. It is as follows: "*Si quis vult membrum ab omni corruptione servare cum recedit à muliere quam habet suspectam de immundicitia, lavet illud cum aquâ aceto mixtæ.*"

After Lanfranc, Harrison de Gaddesden and Fallopius recommended the use of urine and of wine, which has lately been highly lauded by M. Ricord, especially the aromatic wine. Peyrile advises the use of ammoniac, while M. Malapert praises a solution of the bi-chloride of mercury. In England it is a common custom to wash the parts with water rendered slightly caustic with soap and a few grains of fixed alkali, (carbonate of potash.) Males inject a little of this solution into the urethra, which I consider a bad practice, for the lining membrane of the urethra is easily irritated, and the injection may produce an urethritis, which, had it been omitted, might not have become developed.

In Belgium, there is a decree of the burgomaster, requiring a flask of oil and a bottle of a solution of the sub-carbonate of potash to be placed in each chamber of a house of prostitution.

M. Ricord has made experiments to ascertain the action of certain substances on virulent pus. When he inoculated this pus mixed with an alkali or an acid somewhat concentrated, the results of the inoculation were negative. These substances decomposed the pus, not as some have supposed, in virtue of any specific properties, but by their power of destroying matter or organic products indiscriminately. Sulphuric, nitric, hydro-chloric, and acetic acids, and pure chlorides mixed with virulent pus have also prevented the success of its inoculation; whilst the same subject, on whom a pustule was produced by pure pus, that modified by one of the substances mentioned produced no effect, even though placed

side by side with the first, and under the same conditions for success, with the exception of the neutralizing agent. The same results followed the use of the alkaline caustics, such as potash, soda, volatile alkali, wine, alcohol, and concentrated decoctions of tannin.

All are aware of the public experiments made by Luna-Calderon, at the venereal hospital in Paris, for the purpose of showing the prophylactic power of a substance which he had invented. This physician scraped or cut his prepuce, which wound he covered with virulent pus. If after this inoculation, his remedy was applied, no chancre followed; if not applied, the inoculation was followed by a chancre and sometimes by bubo. Luna-Calderon carried his secret with him to his grave.*

M. Langlebert was more generous. He believed that he had invented a prophylactic, and immediately presented it to the public. It is composed as follows:

℞. Alcohol rectified to 40 degrees Cartier, or 95 Gay-Lussac, 3 x.
Soft soap of potash with excess of base, 3 x.

Dissolve and filter; then add:

Essential oil of rectified citron, 3 v.

M. Langlebert thus relates his experiments:

"On Monday last, July 14th, I took pus from the surface of a phagedenic chancre, with an indurated base, and immediately inoculated the left thigh of M. R.; then, steeping my lancet again in the same pus, I scraped the right thigh, so as to remove, to a slight extent, the epidermis and a part of the surface of the dermis. This being done, and wishing to place my proceeding under every possible disadvantage, to satisfy myself I repeatedly dipped my lancet in the virulent pus, and deposited it all warm and living as it were, layer after layer, on the wound which I had made. I then waited five or six minutes, when I applied my prophylactic. The next day the pus inoculated on the left thigh had produced its customary effect: an inflamed pimple, already surmounted by a small vesicle, appeared at the punctured point; whilst the right thigh, where everything had been done to favor the action of the virus, there was nothing but a small scab covering the wound which had been made.

"This experiment inspired me with so much confidence that I did not hesitate to repeat it publicly. On Friday last, July 18th, at one of my lectures, I scraped the left arm with a lancet dipped in the same pus, and the virulence of which I had proved by inoculating a monkey, on which a perfect chancre was developed. I immediately inoculated two of my students, MM. Albanel and Moreau, at their own request. At the expiration of six minutes I applied my prophylactic, and at the present time, July 21st, nothing has appeared with the exception of a small dry scab over the parts scraped."†

* Vid. *Demonstration pratique de la prophylaxié syphilitique, authentiquement constatée,* by Luna-Calderon. Paris, 1815.

† Vid. *Lettre adressée le 22 Juillet,* 1851, *à l'Académie de médecine, par le docteur Langlebert.*

To form an estimate of the value of the prophylactic measures indicated, two principal circumstances are required: 1st. When the pus is deposited only on a sound surface; 2d. When there is a solution of continuity or a local manifestation, an effect of the virus.

It is evident that, in the former case, the mechanical action may suffice; thus lotions with simple water may remove the matter and prevent contagion. Everything depends upon the speedy and thorough washing of the parts, in fine, on personal cleanliness. Alkaline or acid substances may be added to the water, as has been already mentioned; or instead of these we may use aromatic wine; but I doubt their efficacy when used of feeble strength; they must possess great activity to enable them to decompose the pus and destroy the virus; they should resemble those which M. Ricord mixed with the pus which he was about to inoculate, or their effect will be reduced to a simply physical action. Water alone might then be equally efficacious.

In the second case, that is, when there is a solution of continuity, and the virus has already produced some effect, simple washing is not sufficient. Then, the measures proposed by Luna-Calderon and M. Langlebert, offer the greatest pretensions. I doubt their being true and certain prophylactics, for even if certain substances can destroy the virulence of pus before it has been inoculated, and while it remains without the tissues, they may not possess this power when it is inserted beneath the skin, and has already entered the system. Having finished his experiments on this subject, M. Ricord remarks: "But if these substances may be regarded as prophylactics by the effects they produce before inoculation, we should not forget that it was only when the mixture had been made at the very moment of inoculation; for, when pus has been, as it were, implanted in our tissues, and the latter have become infected, unless the parts be destroyed by caustic, to a depth exceeding that of the tissues contaminated, a chancre will be developed. After the rigorous results of inoculation," adds M. Ricord, "we cannot depend on the efficacy of the prophylactic measures mentioned, except for the purpose of destroying virulent pus that has been deposited on a sound surface, or temporarily to destroy a virulent secretion in an individual who, without it, might have communicated disease.

As to the means proposed by M. Langlebert, and his experiments already mentioned, they await the action of a committee appointed by the Academy of Medicine; on which account I forbear to prejudge them. But it will have been remarked that only six minutes passed between the inoculation and the application of the prophylactic. It is necessary, therefore, that it should be applied at once after contagion, which may occur at the commencement of coition, and the latter be prolonged for more than six minutes. If the act is soon accomplished, and the prophylactic immediately applied, it may then act only physically, in removing the virulent matter.

I should add, besides, that M. Ricord's cauterization is not calculated to inspire great confidence. In treating of chancre and its

treatment, in the first division of this work, I have shown how rapidly the virus may penetrate the system, and have mentioned the remarkable case of Professor Dumeril, who, stung by a viper, notwithstanding the immediate suction and cauterization of the wound by his son, suffered the general effects of the poison. Now, it is well known, that the inoculation of the syphilitic poison has always been compared to that of the viper, the justice of which comparison has been particularly acknowledged by M. Ricord. I believe, therefore, that this physician is not warranted in asserting that the cauterization of a wound inoculated with syphilitic pus will prevent the formation of a chancre; and that he is far from the truth in stating that this cauterization will prevent constitutional infection, for he must have forgotten his observations on the rapidity of the penetration of the virus into the system, his generalizations upon its effects, and especially the advice that he has given, to cauterize *to a depth exceeding that of the parts contaminated*, for in a moment the whole system is infected.

We see, therefore, to what private prophylaxis is reduced; it amounts, strictly speaking, to nothing more than an observance of personal cleanliness. It should, likewise, not be forgotten that most of the other measures proposed come under the shield of inoculation, which itself is worthy of but little confidence, especially since it has been clearly proved that the pus of chancre cannot always be inoculated, and that there are individuals who possess the power of resisting the action of the most virulent pus.

I have nothing here to add in reference to the syphilitic vaccination with chancrous pus, as proposed by M. Auzias, nor that recommended by M. Diday, with the blood of an individual affected with tertiary symptoms, because I have already devoted sufficient space to this subject in my *Introductory Remarks*, and because I have shown, in the *second part* of this work, that a person may have syphilis several times. We may have, then, experimental inoculation and physiological inoculation. In speaking of the possibility of being infected with syphilis by inoculation, of course my remarks are intended to apply only to that proposed by M. Auzias, for that of M. Diday has been decided to be quite harmless; it can do harm only by inspiring the person vaccinated with false security.

CHAPTER II.

GENERAL PROPHYLAXIS.—MEDICAL POLICE.

In all ages, the authorities have watched over prostitution; they have even gone so far as to regulate it. We find in ancient Greece, that at Athens, inspectors were appointed, to examine into the customs and dresses of the females, not, however, in a hygienic point of view. Rome, which regulated so categorically houses of

prostitution, and which established a hierarchy among courtezans, Rome, which attempted to repress the disorders produced by debauchery, did nothing in the way of instituting a medical police for prostitutes.

In the middle ages we find new police regulations; they are now more severe, occasionally cruel, and nearly always inefficient; thus, the whip, the confiscation of goods, and even banishment, were in turn inflicted by Charlemagne, St. Louis, and the parliaments, not only on the prostitutes, but on the mistresses of the establishments in which they were received. It was at this period, especially during the reign of St. Louis, that the inutility and even dangers of these measures became again manifested. It was, therefore, deemed more expedient to regulate prostitution. Under these regulations we may include those of the London police, by which women affected with a scalding were driven from houses of prostitution; regulations followed in Venice, in 1302. At length those famous statutes of Queen Jane were passed at Avignon, statutes which have been so often praised, for women were no longer driven from their places of abode, but weekly visits were ordered, and a true medical police was established. Unfortunately these statutes are apocryphal, as shown by the researches made at Avignon by Dr. P. Yvaren.*

In 1449, Parliament began to moderate its severity; it no longer banished persons laboring under venereal disease, but made an exception in favor of patients which were poor and had no home; for them it provided an asylum. Finally, in 1536, infected persons were no longer looked upon as guilty, but as unfortunate sufferers. Parliament still relented even to such an extent as to show more humanity than the administrators of hospitals, the natural guardians of the sick. Parliaments, indeed, struggled with these administrators for twenty-one years, trying to obtain the grant of a small hospital connected with the parish of St. Eustache. What decrees, what injunctions, what threats were necessary to procure shelter for a few suffering mortals! At that time venereal patients were obliged to obtain fraudulent admission into the *Hotel Dieu*. Again were they banished. At last a special establishment was opened for them in the *rue de Lourcine*, and to the magistracy were they indebted for this act.

Still it was was not until 1684 that the treatment of these creatures was ventured upon in a corner of the *Salpêtriere*, at that time a prison for prostitutes guilty of disorderly conduct. Those who were sick then received some attention, but what could they avail when always preceded by the lash? And yet we find unfortunate females seeking an arrest with the hope of being sent to the *Salpêtriere*, and of there obtaining relief of their sufferings. The *Salpêtriere* having become crowded, the *Bicêtre* was opened to venereal patients. This soon became as crowded and unhealthy as the *Salpêtriere*. The history of this period, in reference to

* Vid. the notes of this physician, appended to his excellent translation into French, of the poem of Fracastor.

what was required to obtain admission, the number of patients in a ward, the hygiene of this ward, its mortality, is too horrible for my pen, and I forbear; yet all this happened after 1689, an epoch most fertile in philanthropic deeds and in charitable discourses!

Finally, in 1792, the *Capucins* were opened to the unfortunate subjects of syphilis; this asylum, at present the *Hôpital du Midi*, which I have seen in a very bad condition, was regarded as a fortunate abode, though the mortality was one in forty! True, at the *Bicêtre*, it was one in ten! However, it is from this period that the real progress in the treament and hygiene of venereal patients begins to date. First of all, they must be sought and isolated, so as to withdraw from society these active agents of contagion. Hence the idea of subjecting prostitutes to a sanitary inspection. The serious application of this idea dates from the ordinance of 1657; but those women only were examined who, detained at the *Salpêtriere*, had suspicious symptoms of the disease. It was necessary to extend this ordinance so as to include prostitutes at large. This project was formed by several lieutenants of the police in the eighteenth century, but they did not dare to put it into execution, lest it might compromise their authority in the eyes of the public, by appearing indeed to favor the vice, by affording prostitutes the dangerous privilege of a certain security. Finally, under the prefecture of Dubois, in 1800, this project as well as certain others temporarily required by the economists, and always regarded as chimerical, were actually carried into execution. From this time, we have a true medical police, since their authority was not limited to the suppression of the vice, but included likewise sanitary considerations. Two practitioners, Coulon and Teytaut, were charged to visit periodically houses of prostitution, the expense being borne. by the prostitutes themselves, who paid a monthly tax of three francs. Even a consulting hall was established, where females unable to obtain admission to the hospital, received advice and medicine gratuitously, thus permitting them to be treated among themselves. This establishment received the name of *Dispensaire de Salubrité.*

There is at present, in every town in France, a dispensary, but the ancient tax imposed on the prostitutes having been abolished in 1818, the expense is borne by the municipality. Were I to assert that these dispensaries are perfect, I should state that which is absurd. At these institutions the visits are generally made. In Paris the prostitutes, living by themselves, are examined twice a month. In many of the towns they are visited weekly. *It is necessary that this rule should never be violated, and that they should never be treated by themselves. When once it is known that a female is diseased she should be removed at once to a special hospital, and there remain until entirely cured.* I purposely underline these remarks A number of females, of every occupation, whom poverty or debauchery induce to lead a life of prostitution, escape the police Here is one of the dangers of a medical police, and yet these are the women who infect the greatest numer of young men!

Girls in houses of prostitution are visited weekly, and whenever they change their residence. When one is found diseased she should be *actually* and *immediately* conducted to a special hospital, and not fraudulently to another hospital. They should never be treated in these houses under the promise that they will not have connection during their treatment. Experience has taught us what value to place on the promises of the mistresses of these establishments. Every girl whose health there is reason to suspect during the interval between the visits, should at once be taken to a hospital and examined.

The inefficacy of the medical police arises, I repeat, from the fact that certain girls are treated by themselves and in the houses of prostitution, where they still scatter the disease; another reason is that the visits are not sufficiently frequent, for the mean period of incubation is four days; consequently, a woman who shall have received the germ of the disease on the evening or day before the visit, will appear to be sound and receive a certificate to that effect, and yet she will for seven entire days be capable of communicating the disease to those who have connection with her.

At these visits the girls should be examined with the greatest care. We should not be satisfied with that of the external organs alone, but with that of the speculum we should explore the vagina and the neck of the uterus. The most convenient speculum for this purpose is the bi-valvular instrument. In some cases, it may permit a portion of the mucous membrane to portrude between the branches at the time of their separation, and may sometimes pinch this membrane when it is withdrawn. To obviate this inconvenience, it has been proposed to add two other valves, which are easily united and separated from it, thus facilitating its introduction. But a little precaution and tact will render such addition unnecessary.

The female should be placed upon a table in the same position as if to undergo lithotomy, or she may sit on an arm-chair, or lie on a bed; the legs should be flexed upon the thighs, and the latter upon the pelvis. The speculum, well oiled, is held in the right hand; with the left the operator separates the labia majora and the right labia minora, an assistant separates at the same time those on the left side. If no assistant be at hand, the left middle finger should be applied over the fourchette, whilst with the other fingers the labia are separated; the extremity of the closed instrument is made to rest upon the middle finger in such a manner as not to press against the urethra and superior orifice of the vagina. During the introduction of the instrument we should be careful to press upon the fourchette so as to efface a small *cul-de-sac* which exists behind it, for it may obstruct the operation, or give rise to pain if an attempt be made to force the passage of the instrument. The vulvar ring having been passed, the instrument is glided on from below upwards and from before backwards, and as it passes on towards the uterus, we examine the parts exposed.

The vaginal walls applied against the instrument form a kind of rose with an opening at its centre, and at its circumferance the

natural folds of the canal. We know that we have reached the neck of the uterus by the absence of the folds and a change of color in the lining membrane, but more particularly by the appearance of the os tincæ. It is sometimes difficult to isolate it with the valves of the instrument, either on account of its deviation, or the particular position in which the female has been placed. The examination is concluded by slowly withdrawing the speculum, by which proceeding the whole extent of the vagina is again brought into view. This second inspection may sometimes expose lesions which escaped notice at the first examination.

The subject of general prophylaxis cannot be completed without referring to the means of preventing the spread of contagion by the male. But if we have already discovered the difficulties attending the visits of inspection of the female, whom the laws, as it were, have placed at our disposal, what can we expect when we come to the male, to whom the right of visit does not extend. In the army the case is different; there, discipline and subordination, and interests easy to be appreciated, have rendered possible the detection of the malady, and the immediate application of the remedy. In the first place, the punishment indiscriminately inflicted on soldiers with the venereal disease, on their discharge from a hospital or infirmary, has been abolished, and thus soldiers no longer conceal the existence of affections which they suppose to be venereal; they can now seek assistance from the surgeon without apprehension; their cure is therefore more speedy, an advantage both as regards their own health, and the propagation of the malady.

The minister of war has recommended to the commanders in the army, and to the heads of the administration, to unite with the civil authorities in opposing, to every possible extent, the spread of a scourge so disastrous in its effects to the public as well as to the army. These recommendations have produced beneficial results, but we could hope for still better, if the instructions were decided, simple and precise, so as to insure their execution.

In Belgium, the medical inspector-general of prostitutes is directly associated with the heads of the venereal hospitals, and after each admission the name and residence of the person who has communicated the disease are taken. In a circular from the inspector-general of the army, bearing date of December 21, 1842, M. Vleminckz issued to all the heads of the military hospitals, the following regulation adopted in the garrison at Liege:

"Every person found diseased, is immediately interrogated by the officers and sub-officers of his company who have received an order from their chief; a corporal accompanies the patient with the commissary of police to the residence of the woman infected. This agent takes their depositions, arrests her, causes her to be examined, and sent to a dispensary; he furnishes the corporal with a duplicate of the soldier's testimony, the corporal takes him to the hospital, and the document is delivered in custody to the surgeon. In the absence of this individual, the health officer of the establishment surrenders him at once to the person in command. No ve-

nereal patient can be treated in the barracks. Soldiers are severely punished if they fail to make known their attacks, as are those who, by false statements, prevent the search for an infected prostitute, but for those only. The inspector-generals maintain frequent communication with the physician in charge of the syphilitic wards for soldiers.

"Such," says M. Vleminckz, "are the advantages of these regulations, that in 1845, out of a force of from twenty-five to thirty thousand men, in the Belgian army, there were but one hundred and fifty affected with venereal disease, (one patient out of one hundred and ninety soldiers.) There would not," he observes, "have been one hundred, if the sanitory police at Gand and at Namur had acted efficiently." M. Bertherand, who mentions with approbation these regulations, adds: "Now contrast this with what occurs in France! At the venereal hospital in Strasbourgh there are daily from one hundred to one hundred and fifty patients; if we add to this an equal number of cases of urethritis, and the milder forms of chancre, treated in the regimental infirmaries, we find that eight thousand men in garrison furnish, first, as many venereal patients as are found in the whole Belgian force; second, the sextuple proportion of one syphilitic patient to thirty-three men. If we consult the table, at the commencement of this work, of cases treated in our hospital from 1836 to 1846, calling the price of one day one franc, we shall find that the mean cost, on the budget of war, of syphilis, at Strasbourg, is nearly forty thousand francs per annum.

"Why, in our barracks, is not the head of department conjointly responsible, to a certain extent, for the prevention of disease? The severe punishment of the venereal soldier having been abolished, the deposition of the brigadier or corporal has lost all its odious character. Their repugnances once overcome, it well be easy to make men of standing, like the heads of department, understand that it is as much for the morality and dignity of the corps to detect a soldier that would conceal the venereal disease, as one affected with the itch, or any other contagious malady.

"With false notions of hygiene, the soldier should no longer be shut out of public houses, known and examined, and be reduced to the resources of clandestine prostitution. Surely it is better to overlook visits to the former, and redouble our vigilance as regards these private women, in which all large towns abound. Females who are not subjected to examination, who have a thousand plans for escaping sanitary visits, are the most dangerous of all prostitutes.

"The measures proposed by the inspector-in-chief of the health of the army in Belgium, supposes perfect harmony and constant intercourse between the local authorities and the officers in command, aided by the army surgeons. With us, the number of intermediate agents impede the progress of matters, if they do not render it impossible by the obstacles they present, and the disgust which they inspire. The distribution of the corps, the frequent changes of the health officers, do not allow them to establish with

special physicians, the intercourse indispensable to success in preventing the spread of the venereal disease."*

I here terminate my remarks on prophylaxis, stating that the idea of obtaining from each patient admitted into a hospital, and every practitioner consulted, the name and residence of the parties who communicated the disease, and that of granting to every physician authority immediately to arrest such person—ideas partly carried into execution in the Belgian army, would, if adopted in civil life, produce the most happy results. But I touch here upon a delicate question, which I propose hereafter to discuss in a manner commensurate with its importance.

* *Bertherand, Precis des maladies vénériennes.* Strasbourgh, 1852.

THE END.

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